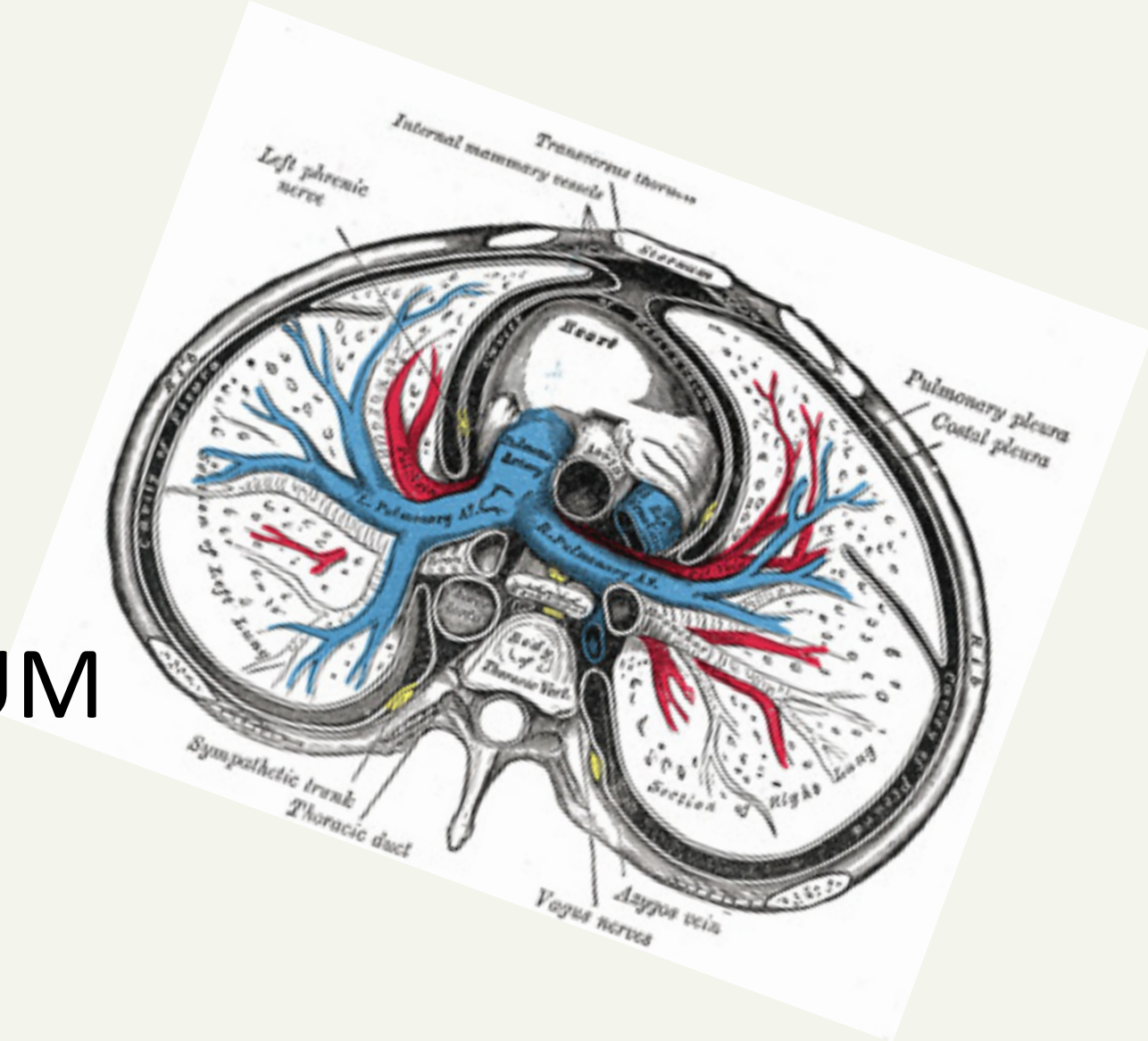


MEDIASTINUM

“midway”

Prof Dr MTY



MEDIASTINUM

Central compartment of the thoracic cavity covered by mediastinal pleura

Contents: all thoracic viscera except lungs

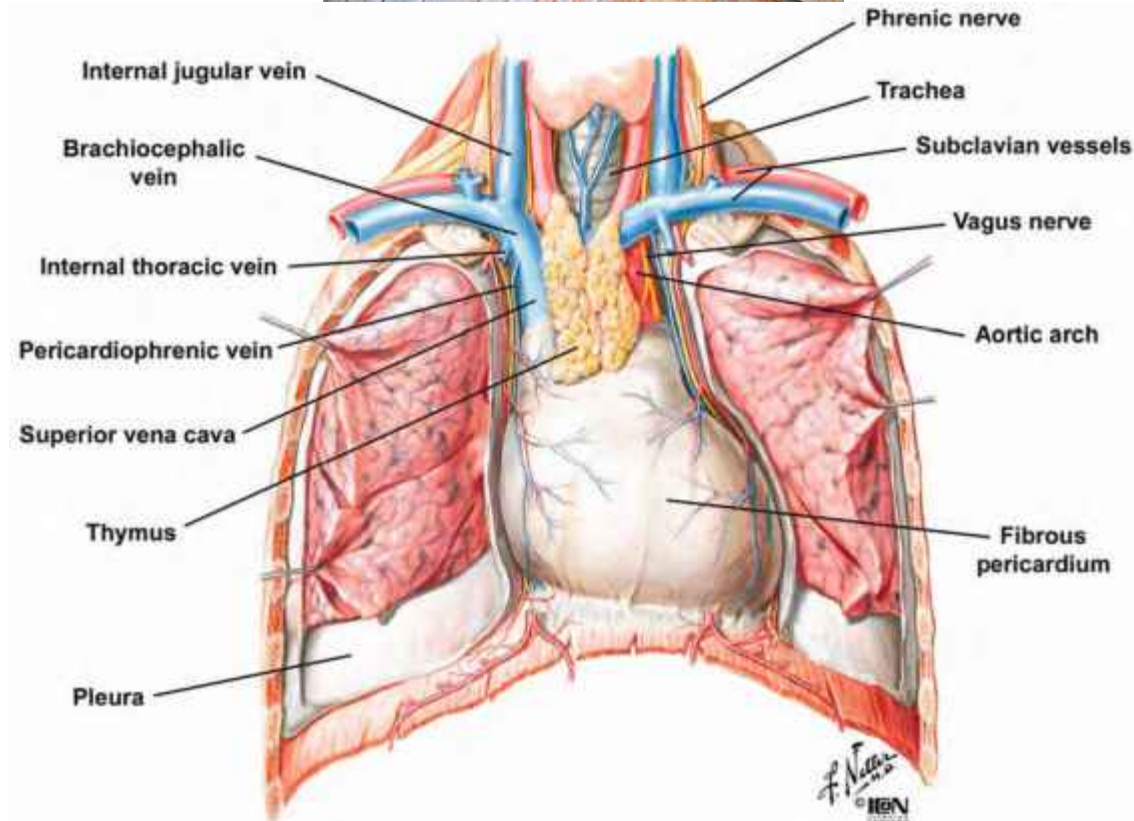
Extent:

Superior -thoracic inlet

Inferior -diaphragm

Anterior -sternum & costal cartilages

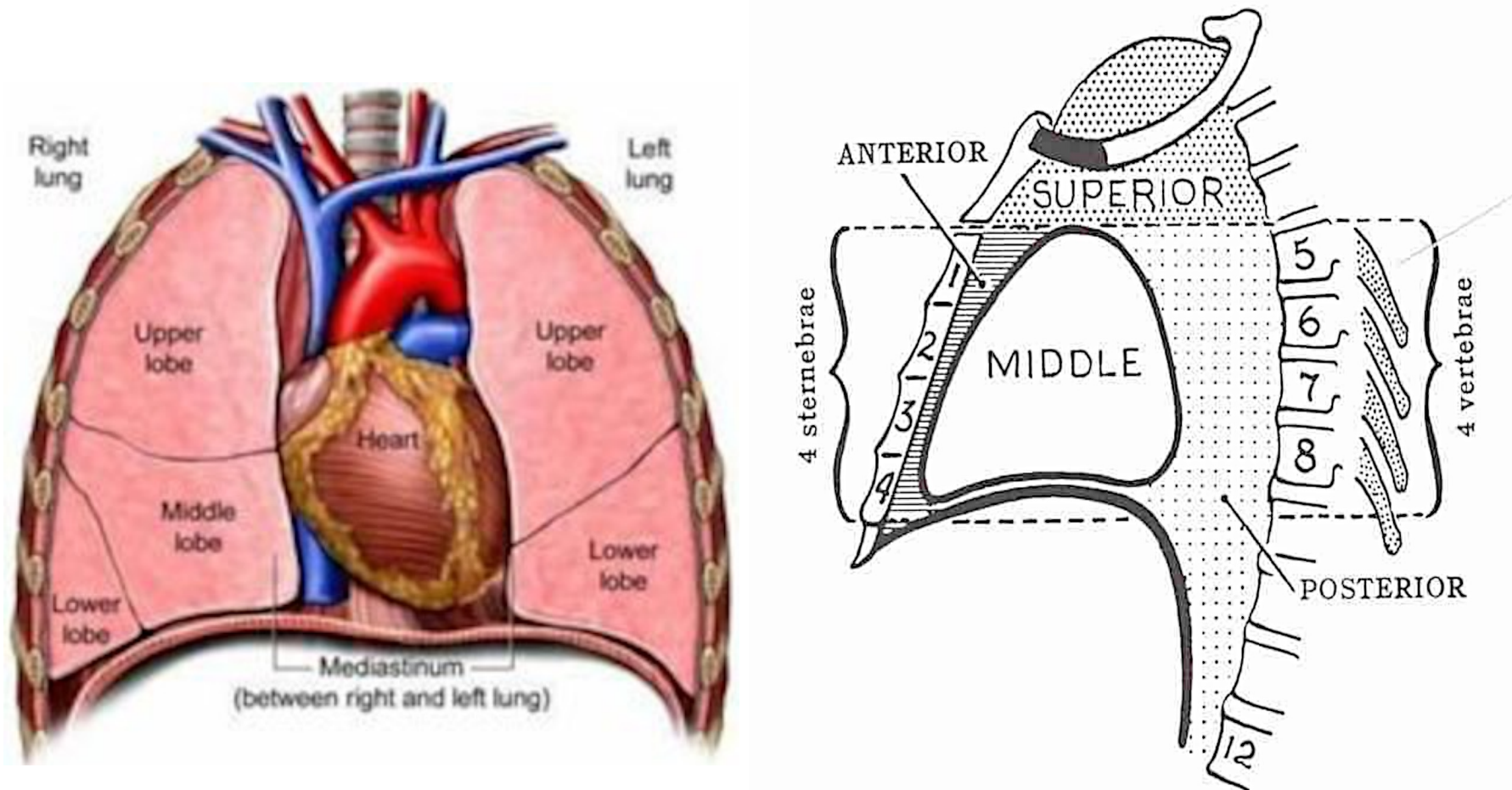
Posterior -bodies of thoracic vertebrae



MEDIASTINUM

Surrounded by blood and lymphatic vessels, lymph nodes, nerves and adipose tissue

Looseness of structures enable mediastinum to accommodate changes in movement, volume & pressure in the thoracic cavity



Divisions of the Mediastinum

SUPERIOR MEDIASTINUM

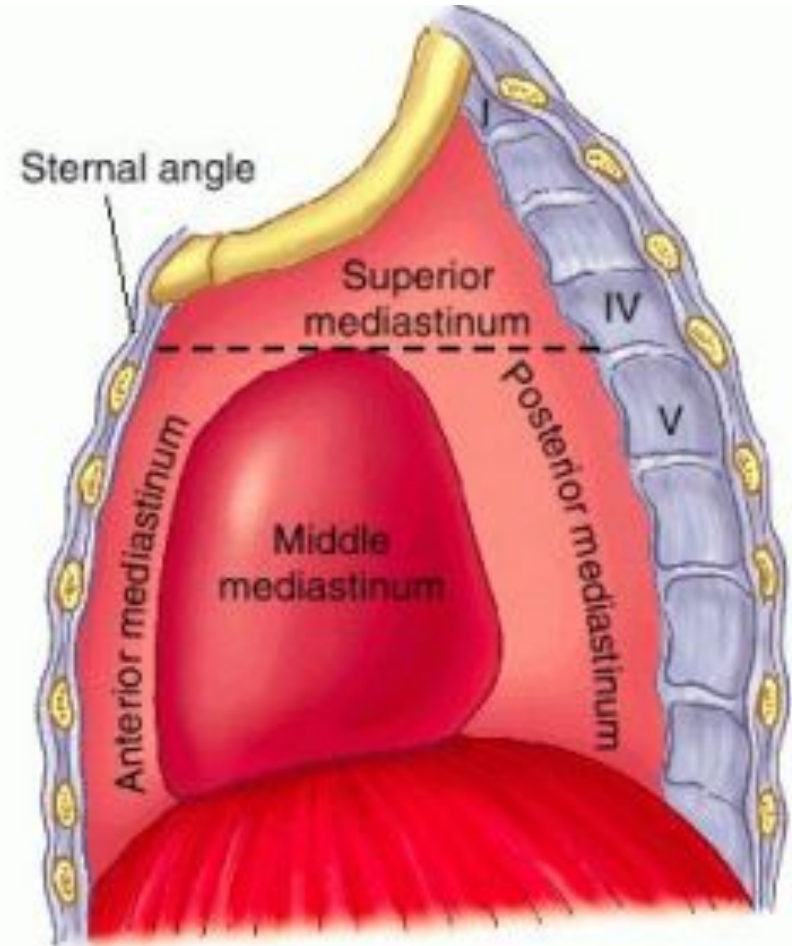
Superior - thoracic inlet

Inferior - transverse thoracic plane
(passing from the sternal angle
(ant) & the vertebral discs between
T4 & T5)

INFERIOR MEDIASTINUM

Superior -transverse thoracic
plane

Inferior -diaphragm



Inferior Mediastinum

ANTERIOR MEDIASTINUM

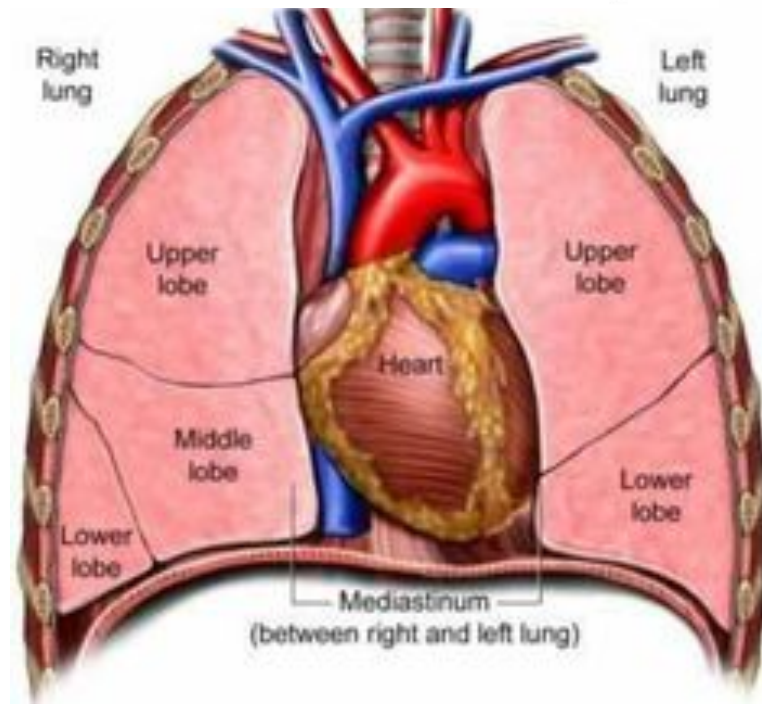
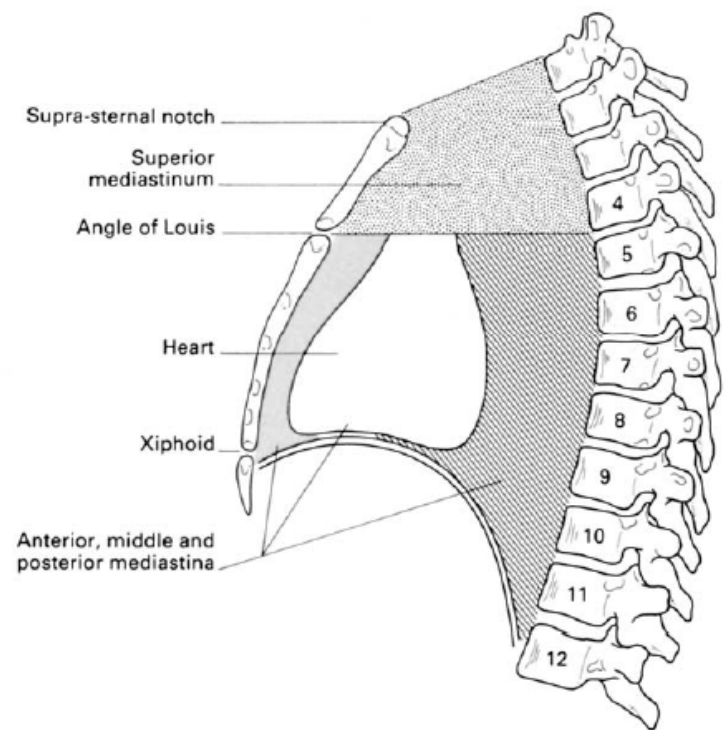
contains thymus, lymph nodes
& fat

MIDDLE MEDIASTINUM

contains the heart & great
vessels

POSTERIOR MEDIASTINUM

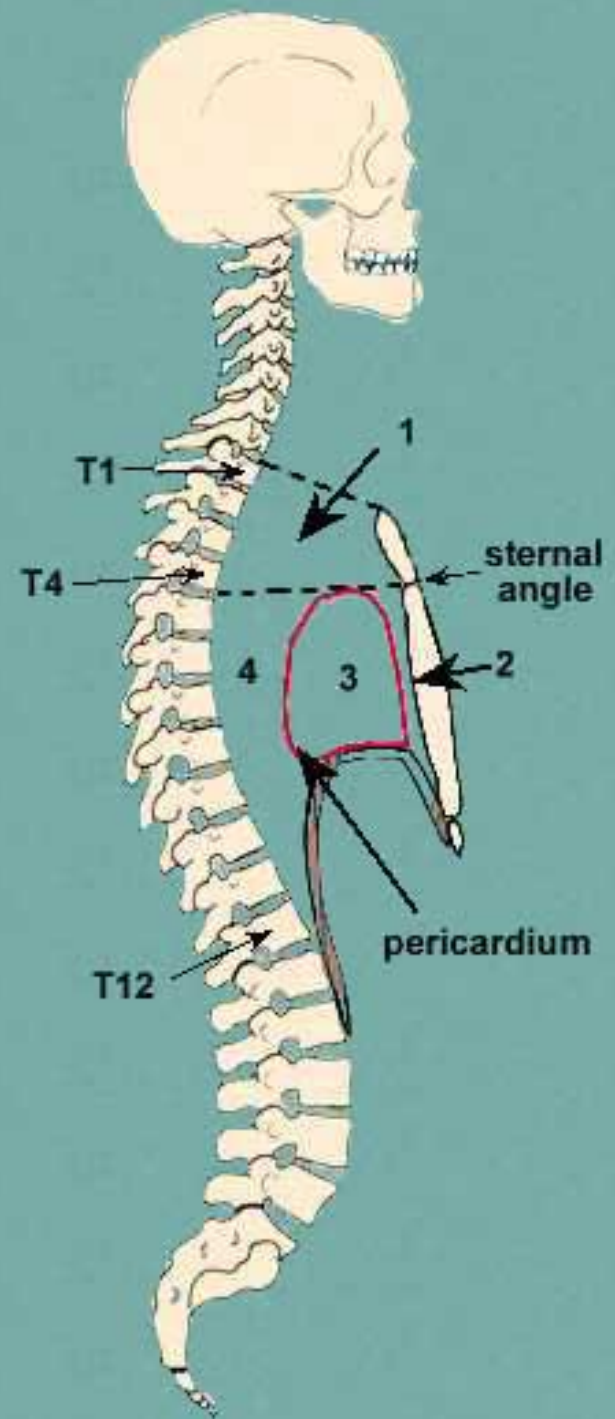
contains esophagus, great
vessels, vagus nerves &
sympathetic trunks

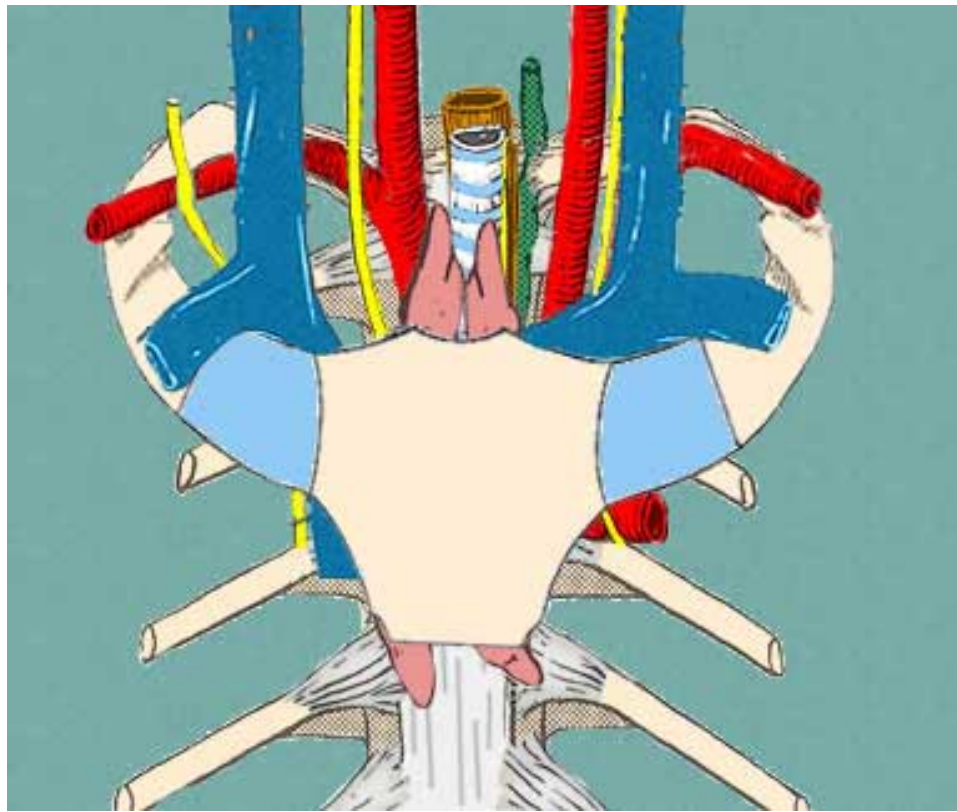


Superior Mediastinum

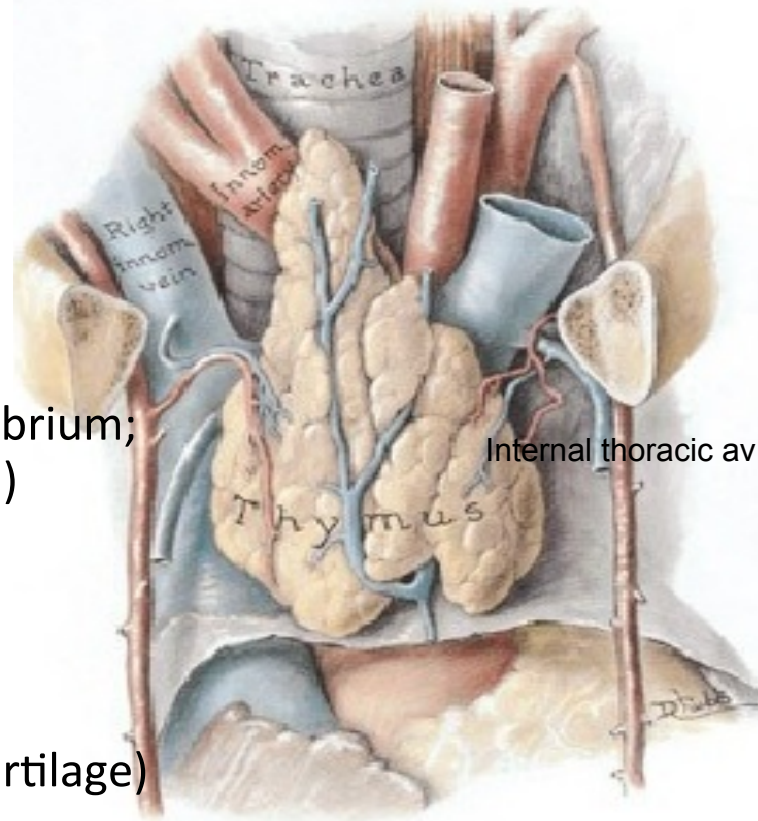
Boundaries of the superior mediastinum:

- anterior - manubrium of the sternum
- posterior - anterior surface of bodies of T1-T4 vertebrae
- superior - plane of the thoracic inlet
- inferior - plane of the sternal angle
- lateral - mediastinal pleura





Superior Mediastinum



Contents (anterior to posterior)

Thymus gland

(primary lymphoid organ located behind manubrium;
during puberty it undergoes gradual involution)

Great Vessels

Brachiocephalic veins

Superior vena cava

(formed at level of 1st R costal cartilage;
enters right atrium at level of 3rd R costal cartilage)

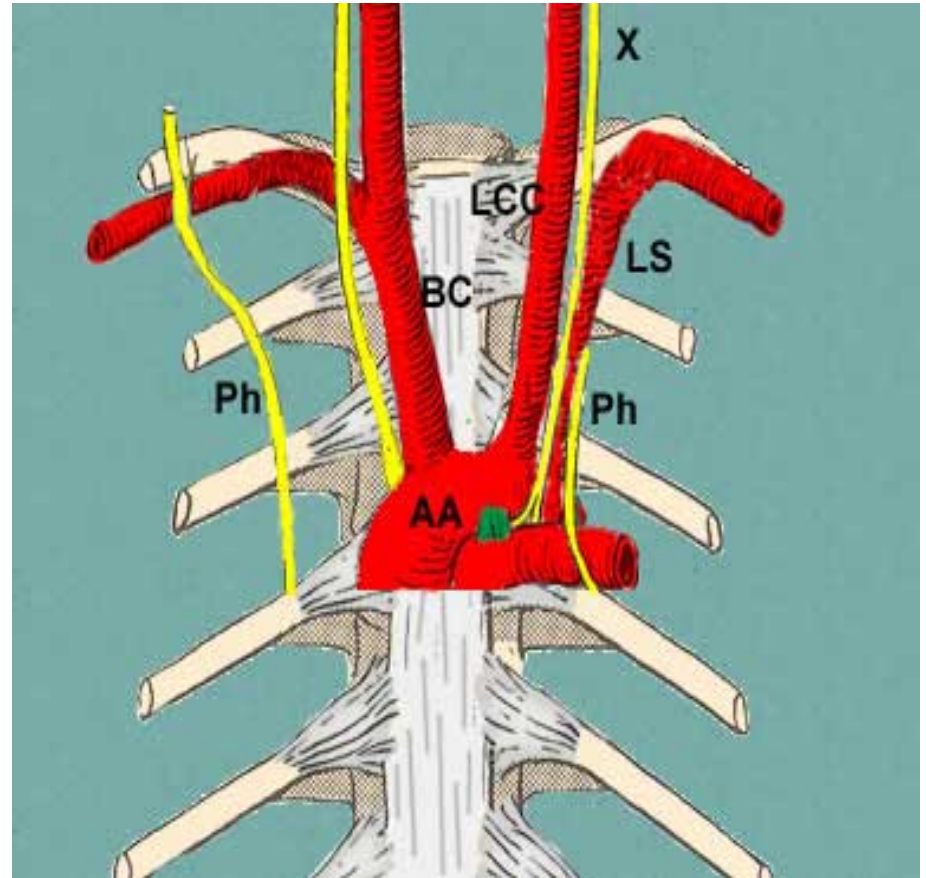
Superior Mediastinum

Contents

Arch of the Aorta; It starts behind the 2nd R SC joint and ends at the 2nd L SC joint

Branches:

- Brachiocephalic trunk
- Left common carotid artery
- Left subclavian artery



Superior Mediastinum

Contents

Nerves

Vagus & Phrenic nn

Cardiac plexus

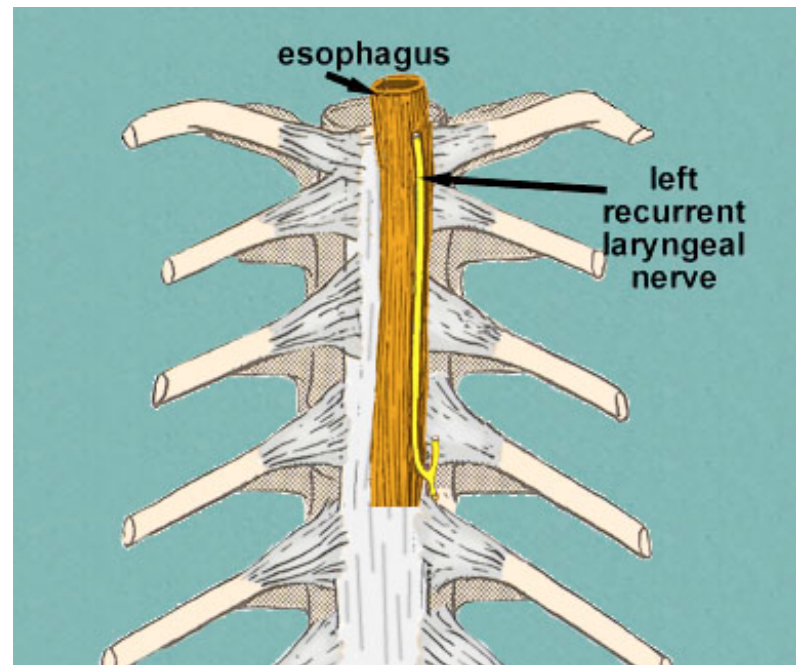
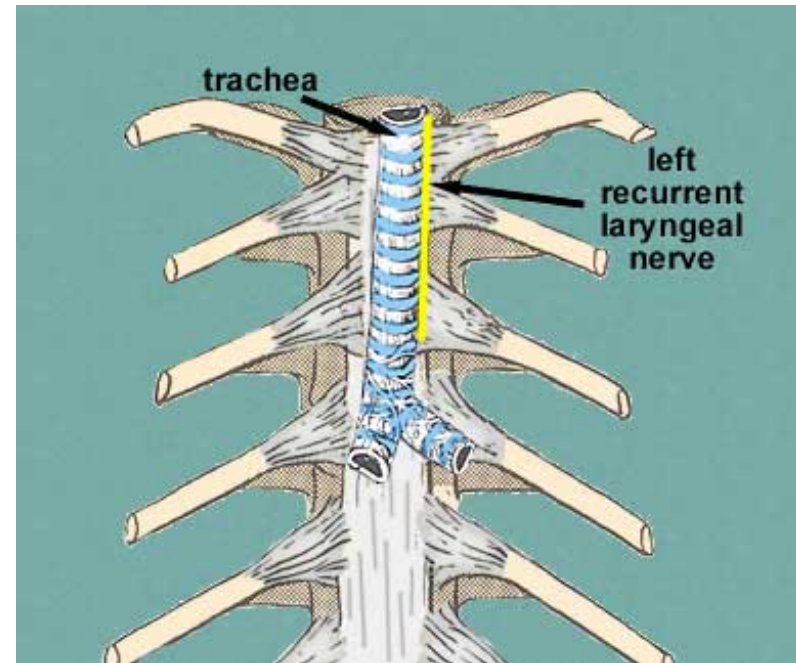
L recurrent laryngeal n

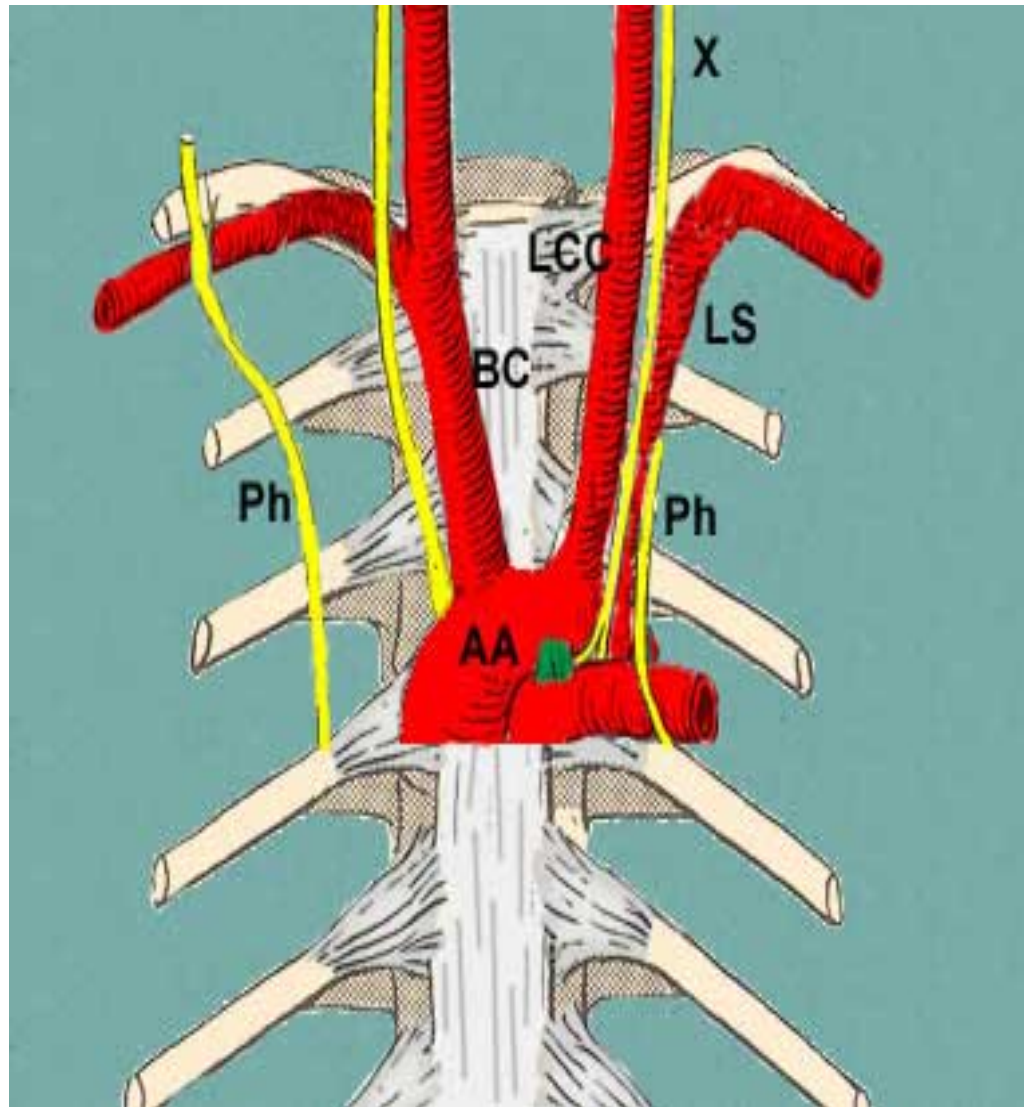
Trachea

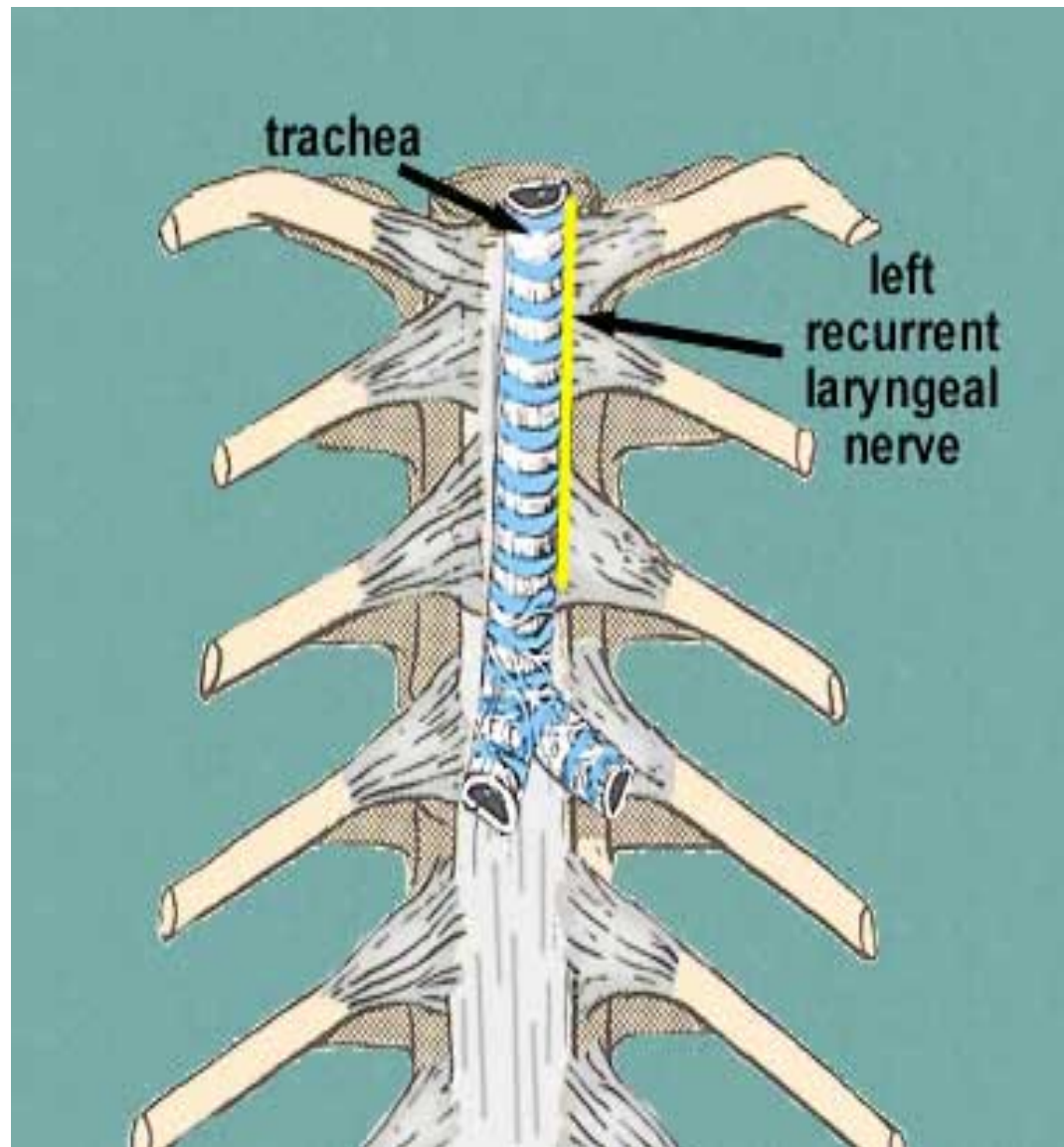
Esophagus

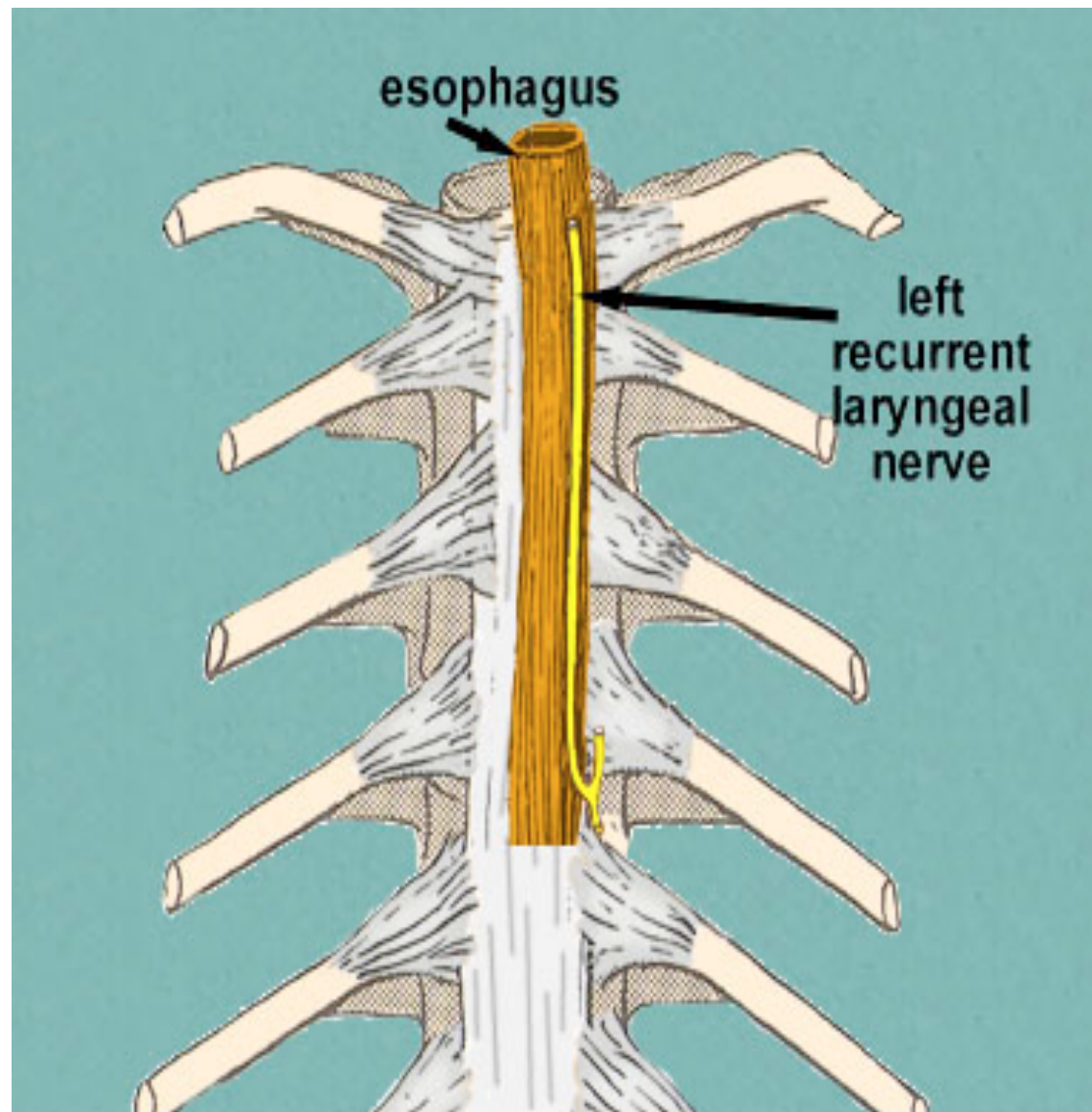
Thoracic duct

Prevertebral muscles

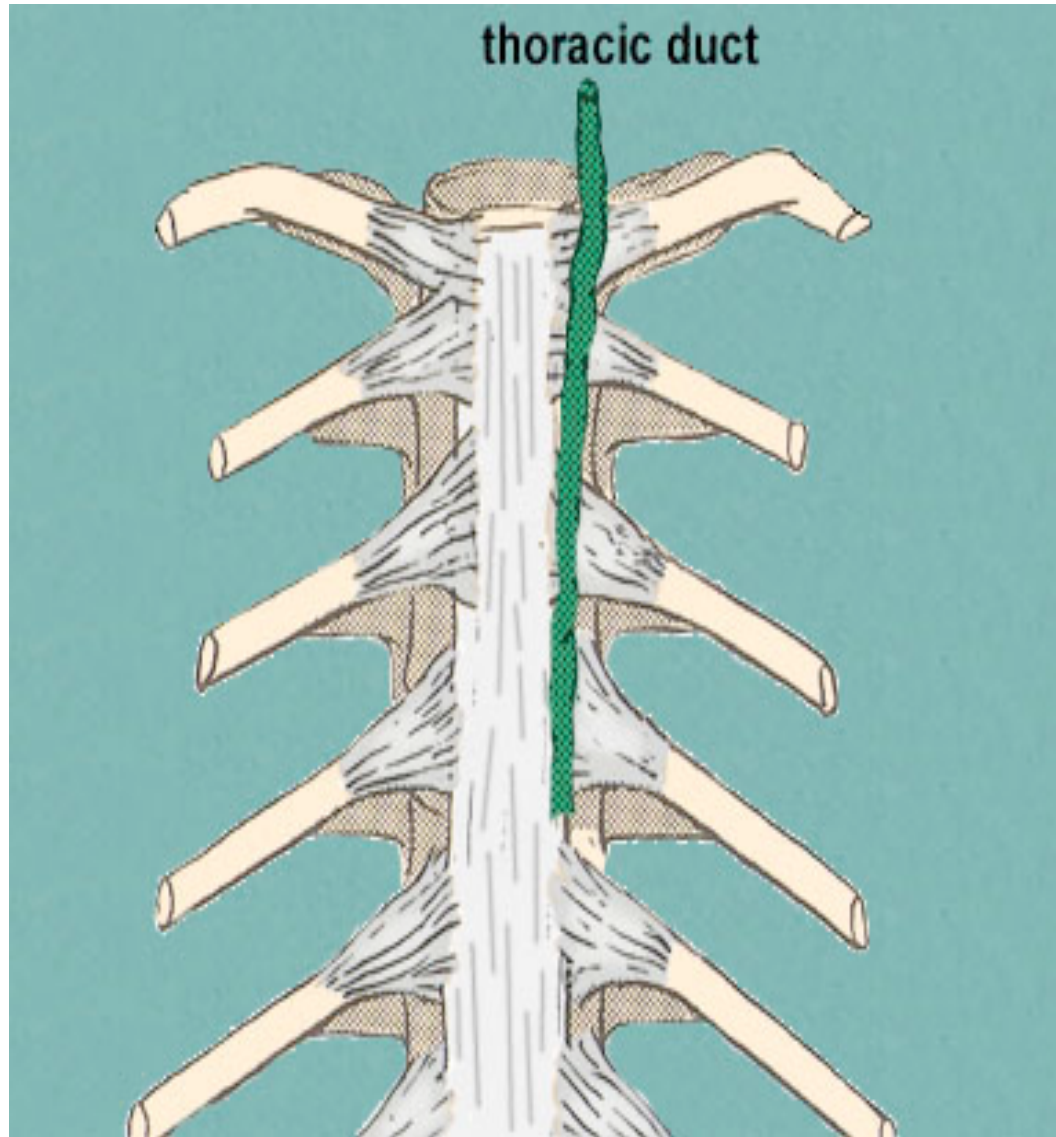


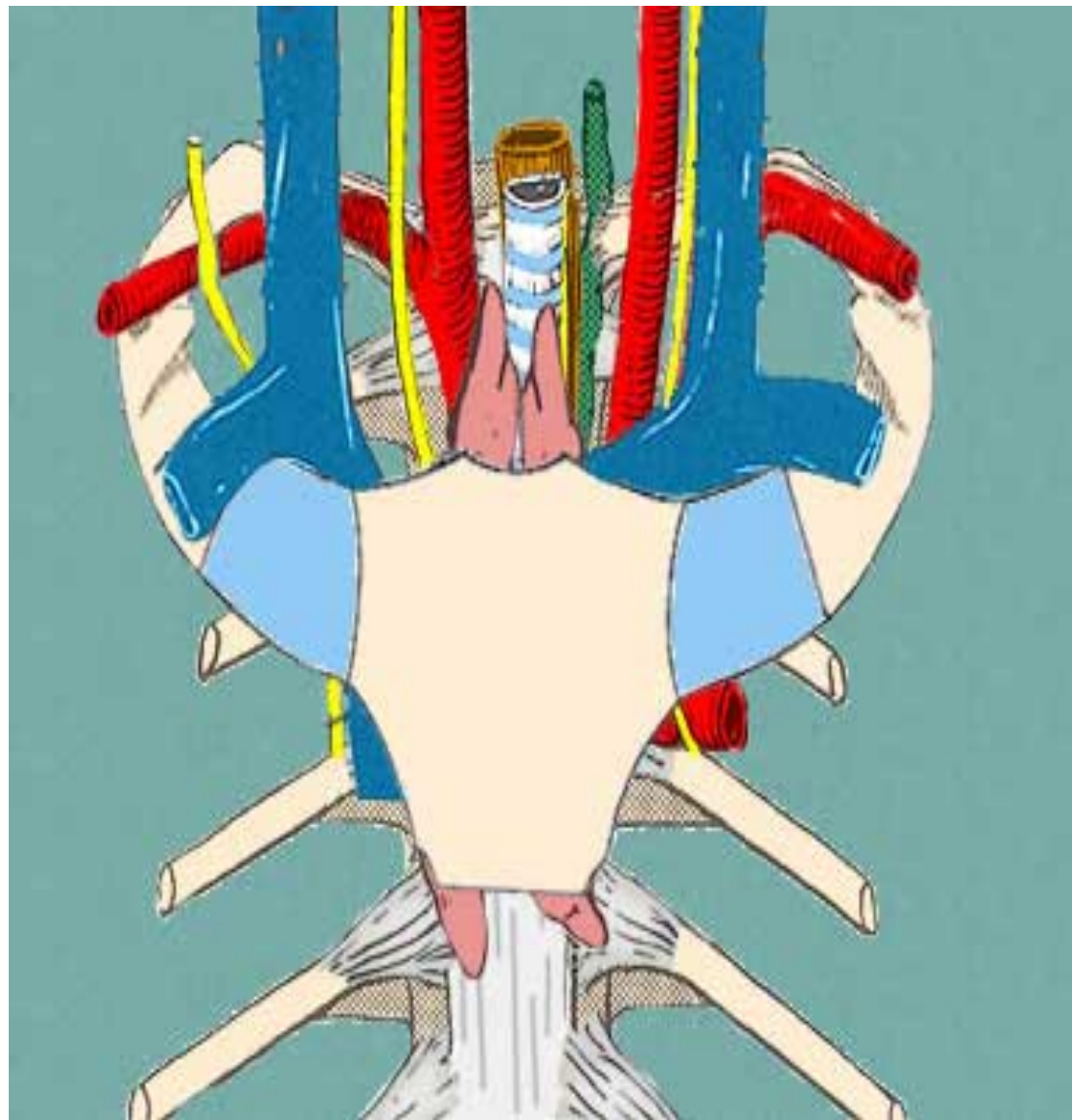






thoracic duct





Inferior Mediastinum

ANTERIOR MEDIASTINUM

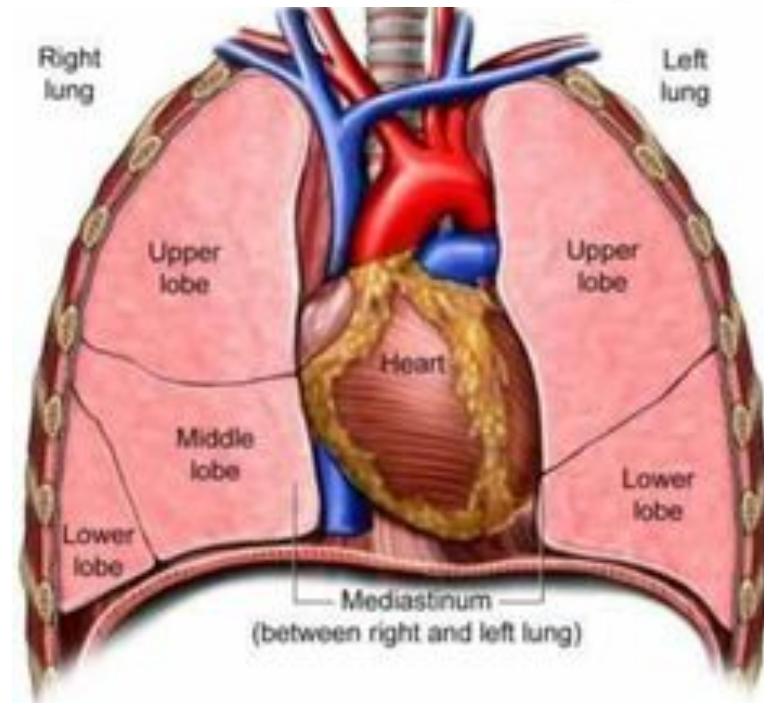
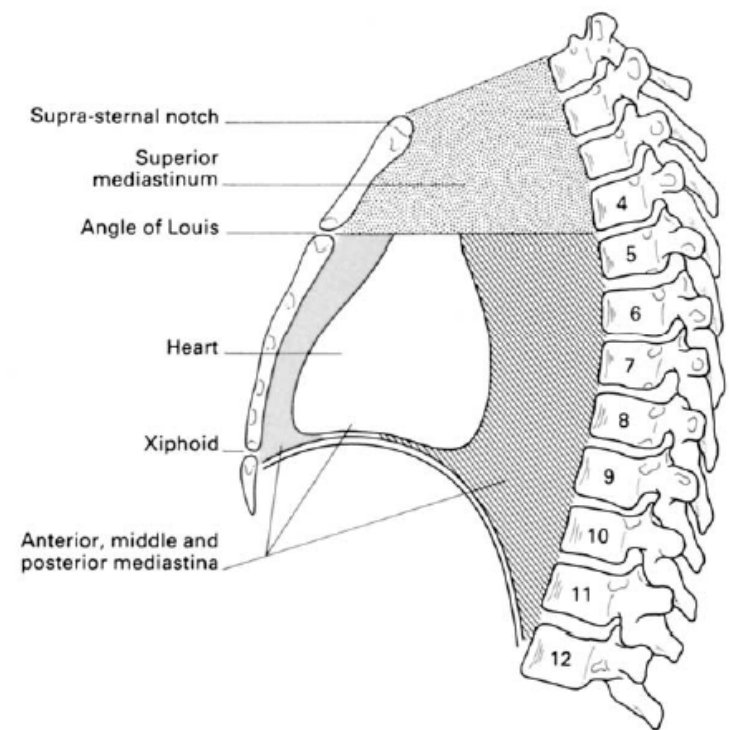
contains thymus, lymph nodes
& fat

MIDDLE MEDIASTINUM

contains the heart & great
vessels

POSTERIOR MEDIASTINUM

contains esophagus, great
vessels, vagus nerves &
sympathetic trunks



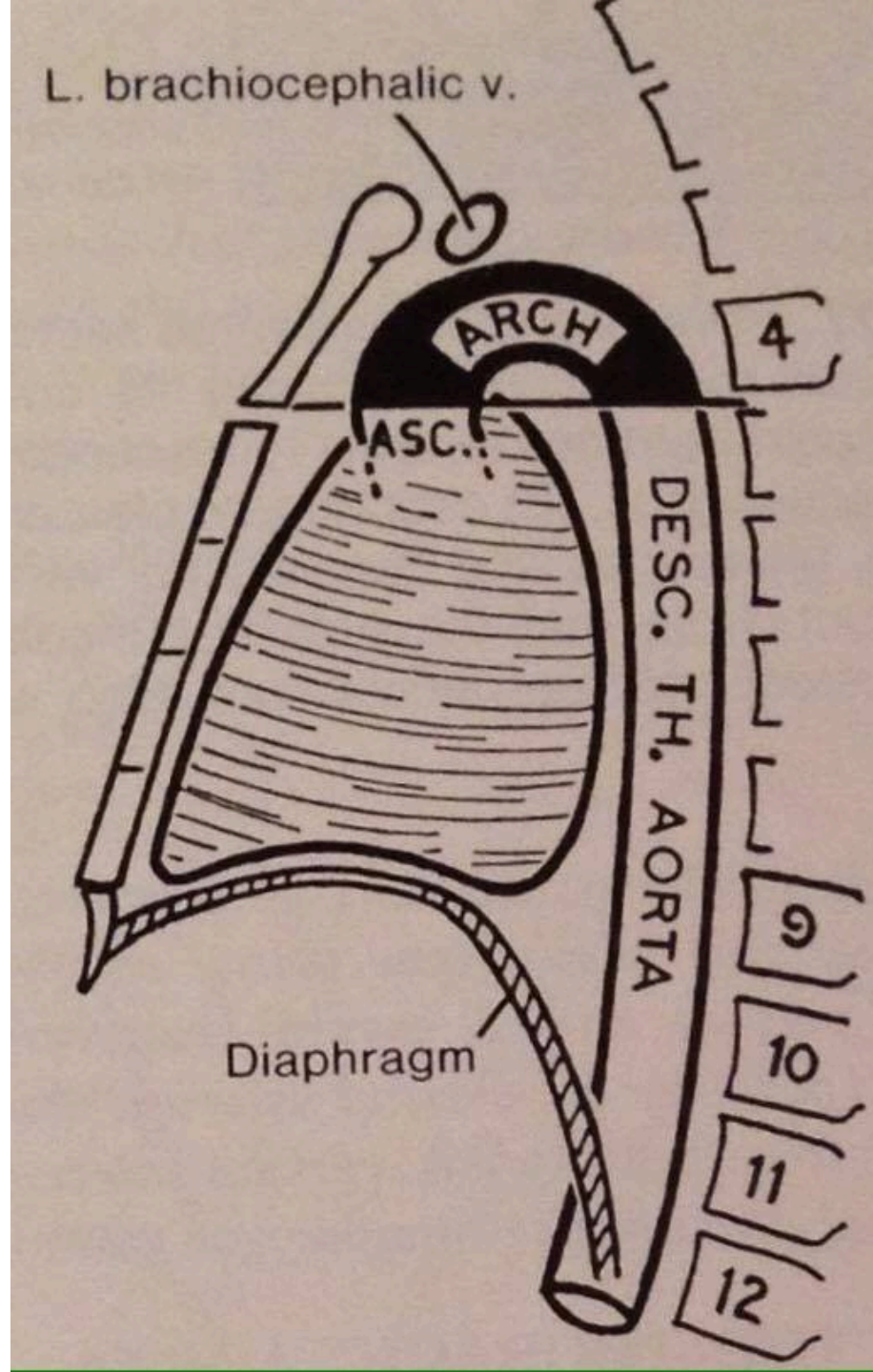
Anterior Mediastinum

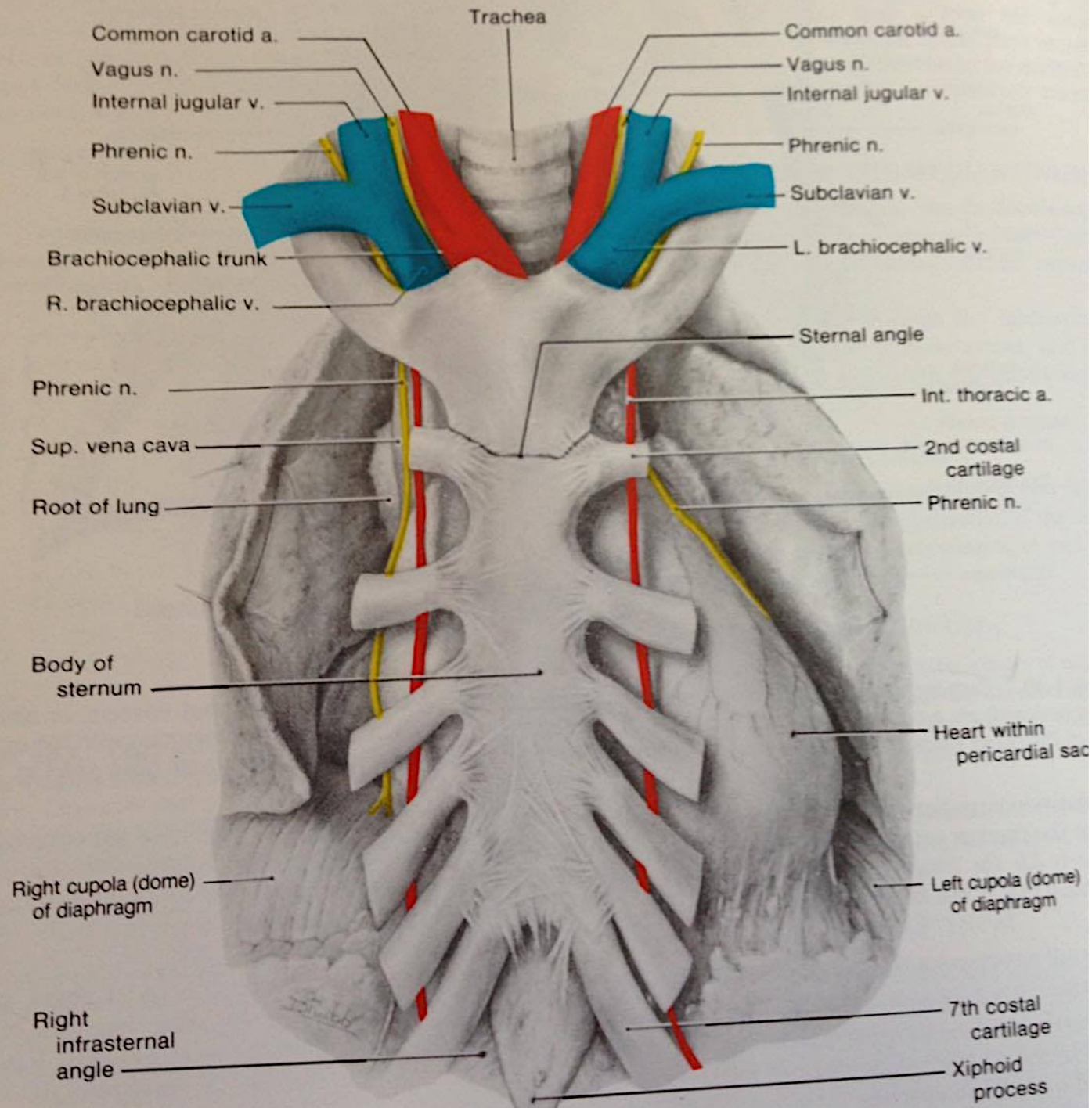
Smallest subdivision of the inferior mediastinum

Boundaries:

Anterior: body of sternum & transversus thoracis muscles
Posterior: pericardium

Contents: Loose connective tissue, adipose tissue, lymphatic vessels & lymph nodes, branches of the internal thoracic vessels





L. brachiocephalic v.

ARCH

4

ASC.

DESC. TH. AORTA

Diaphragm

9

10

11

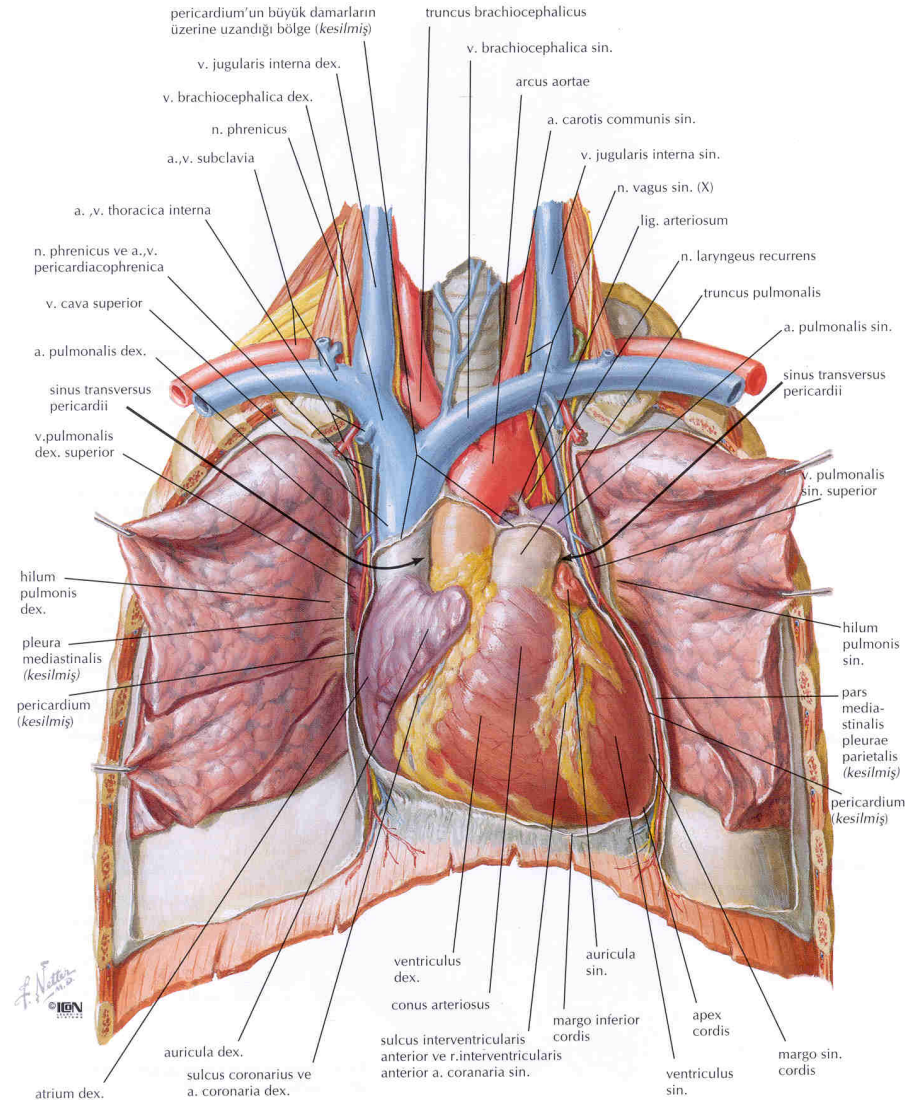
12

Middle Mediastinum

Bounded by the pericardium and contains **the heart & great vessels**

Middle Mediastinum

- Heart
- Pericardium
- Ascending aorta
- Pericardiophrenic a&v
- Lower part of sup vena cava
- Azygos vein
- Tracheal bifurcation
- R&L principal bronchi
- Pulmonary trunk
- phrenic nerve
- Deep cardiac plexus, tracheobronchial lymph nodes



Posterior Mediastinum

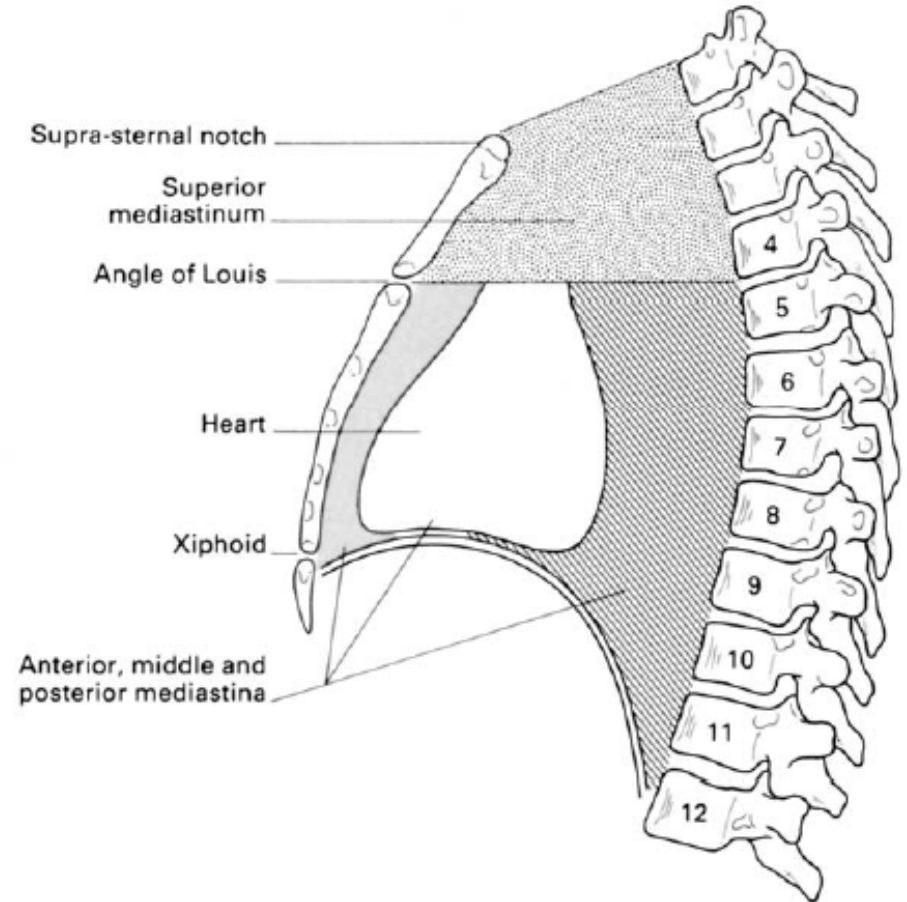
Boundaries:

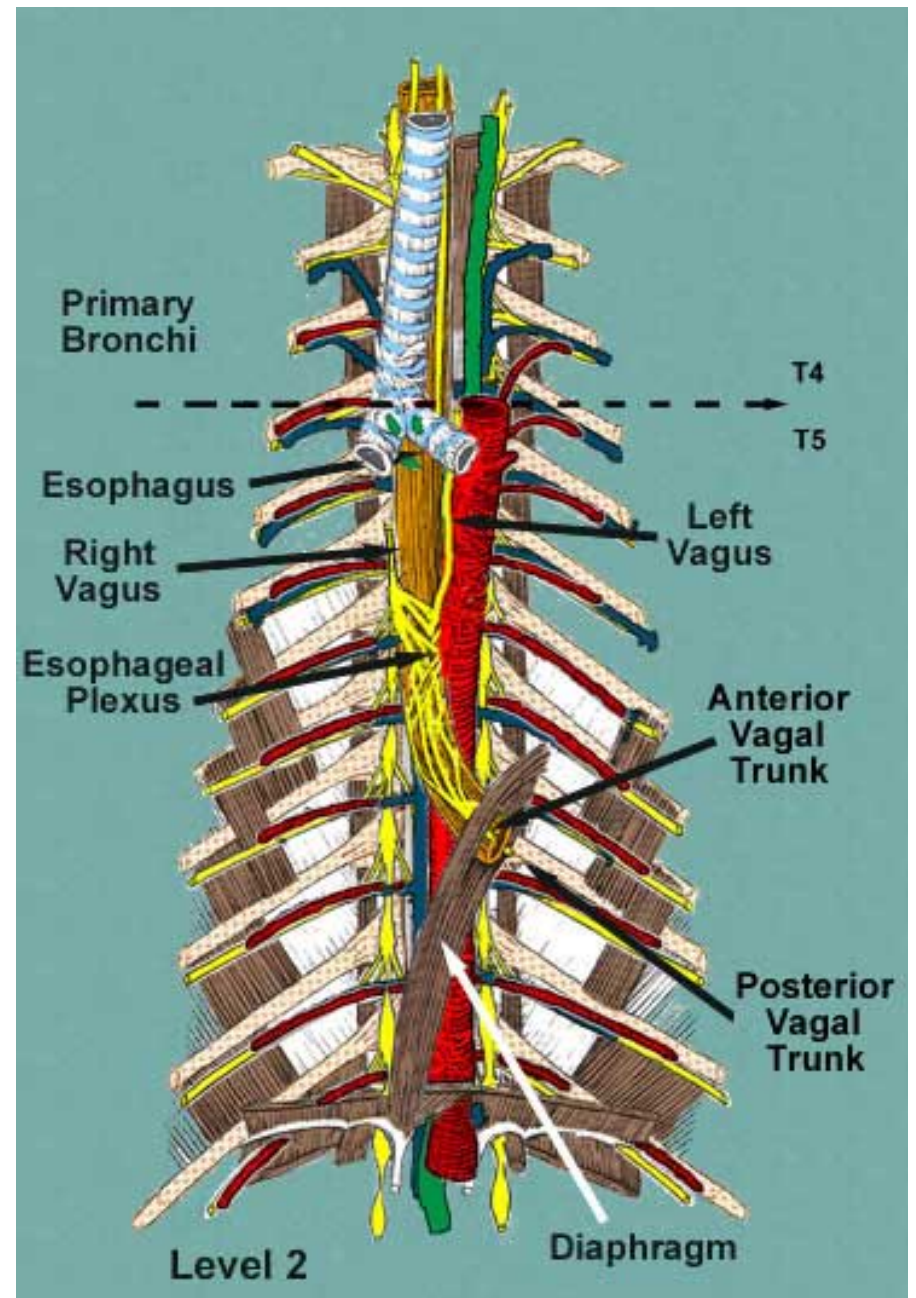
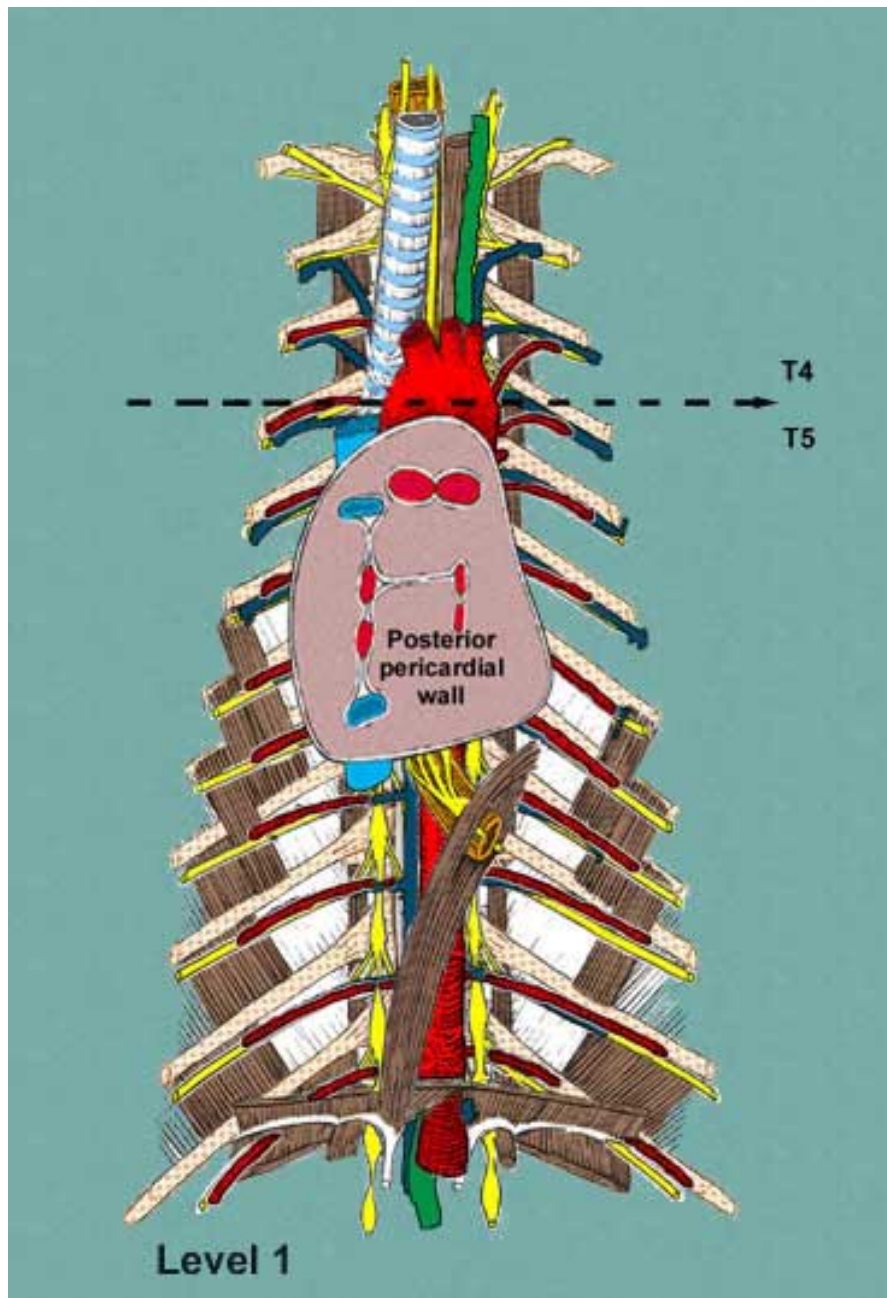
Anterior-Pericardium &
Diaphragm

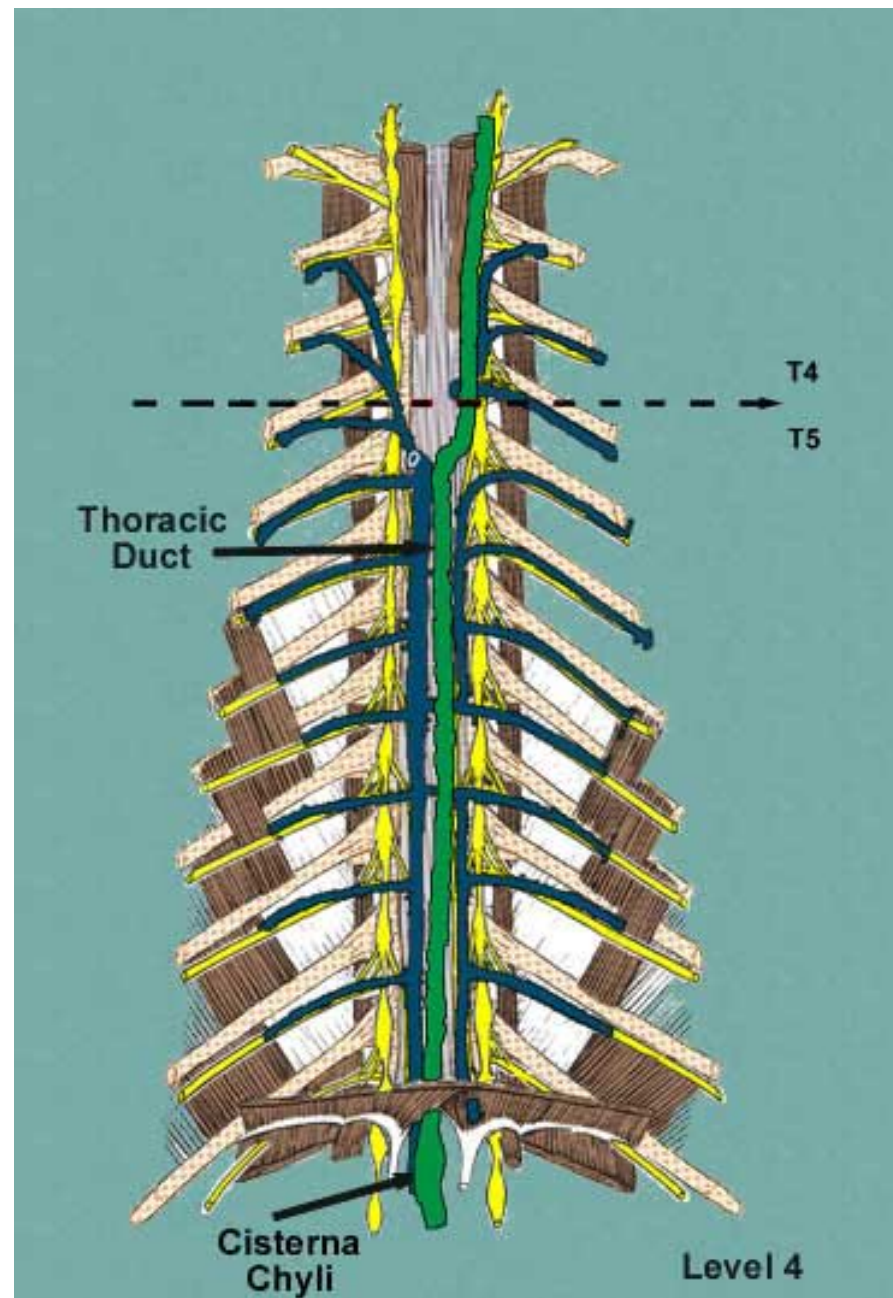
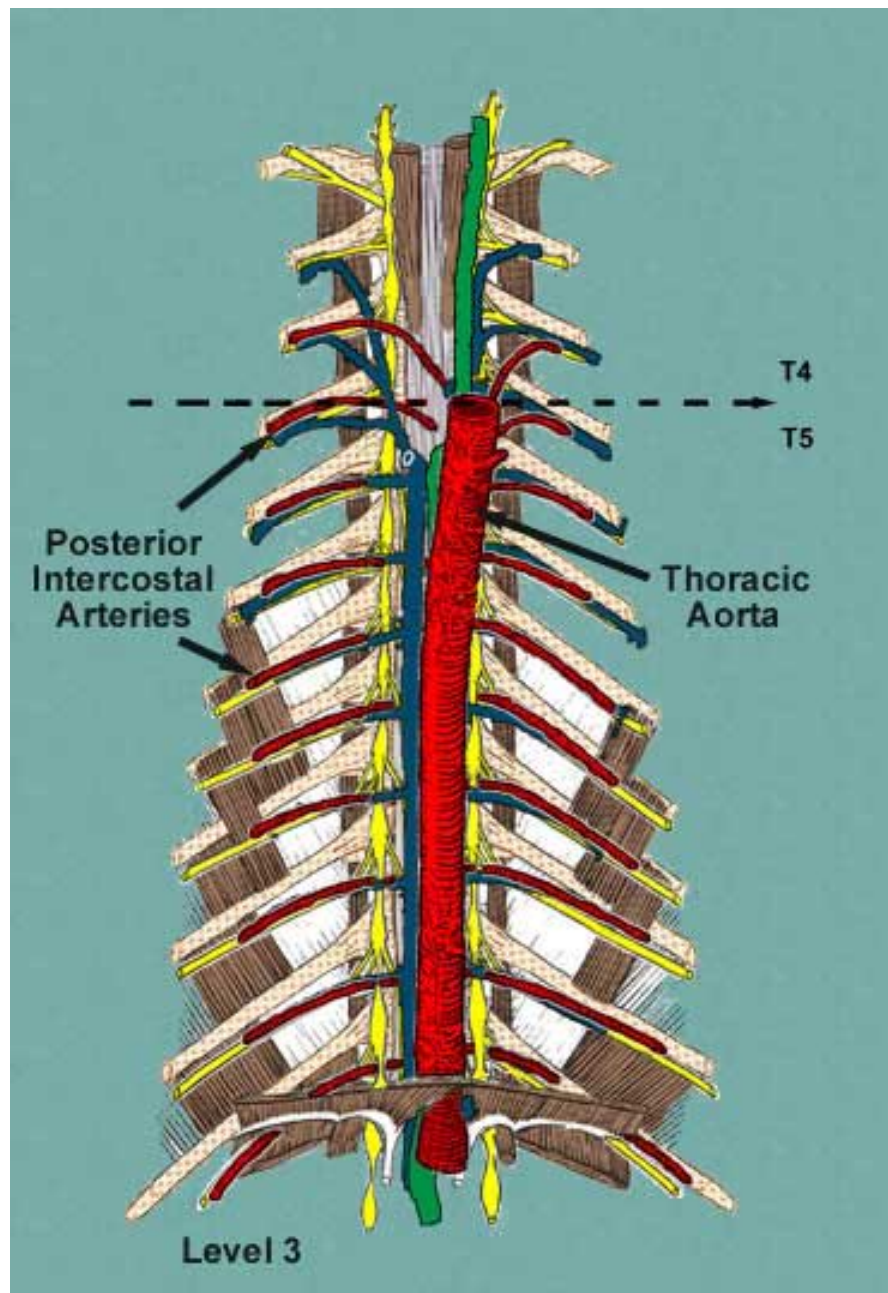
Posterior-T5 to T12 vertebrae

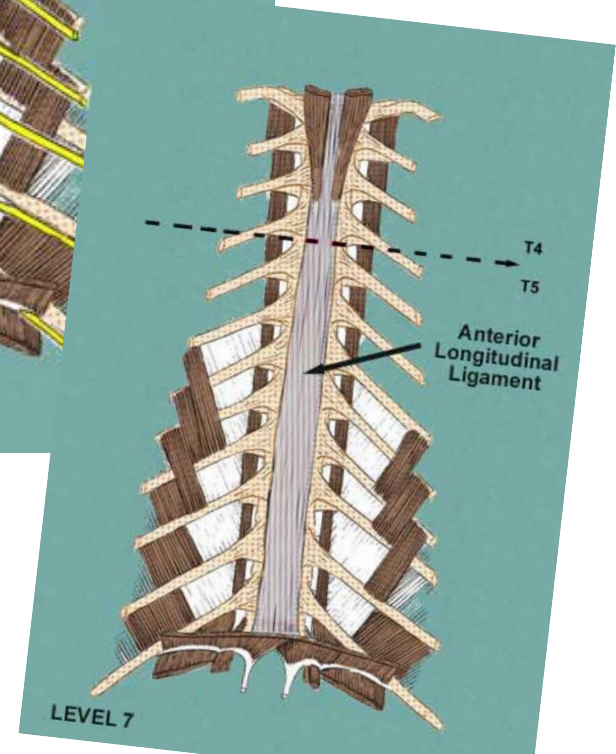
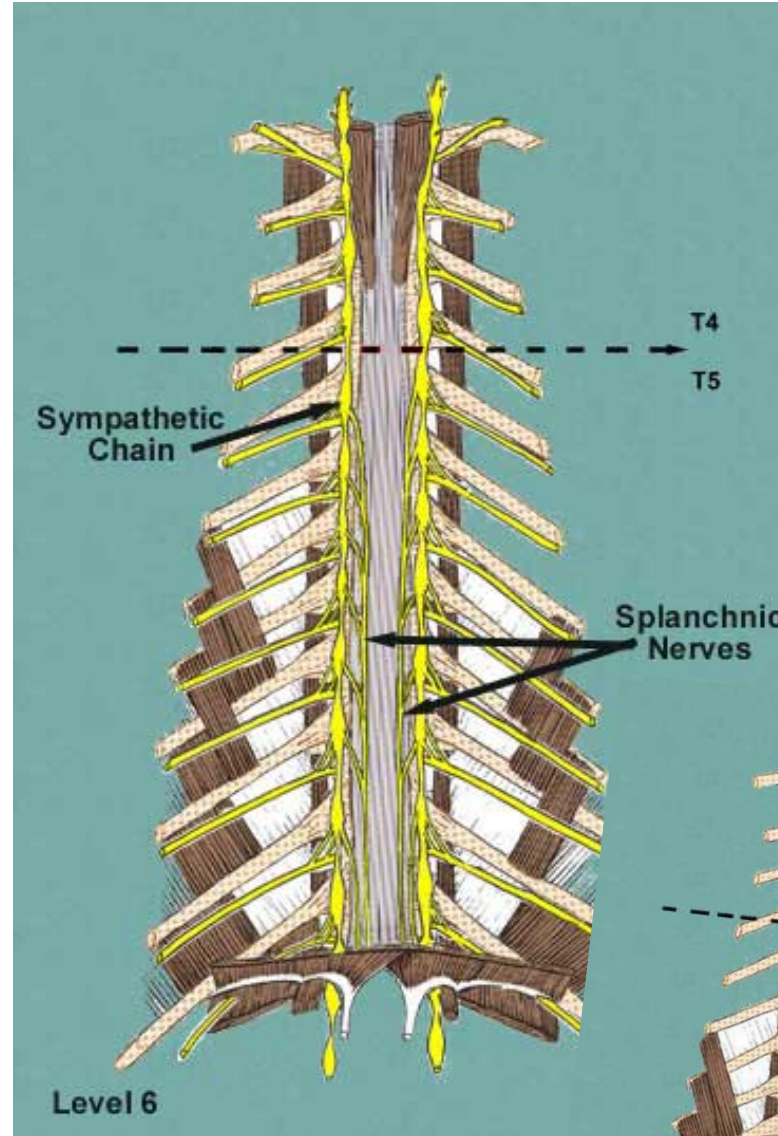
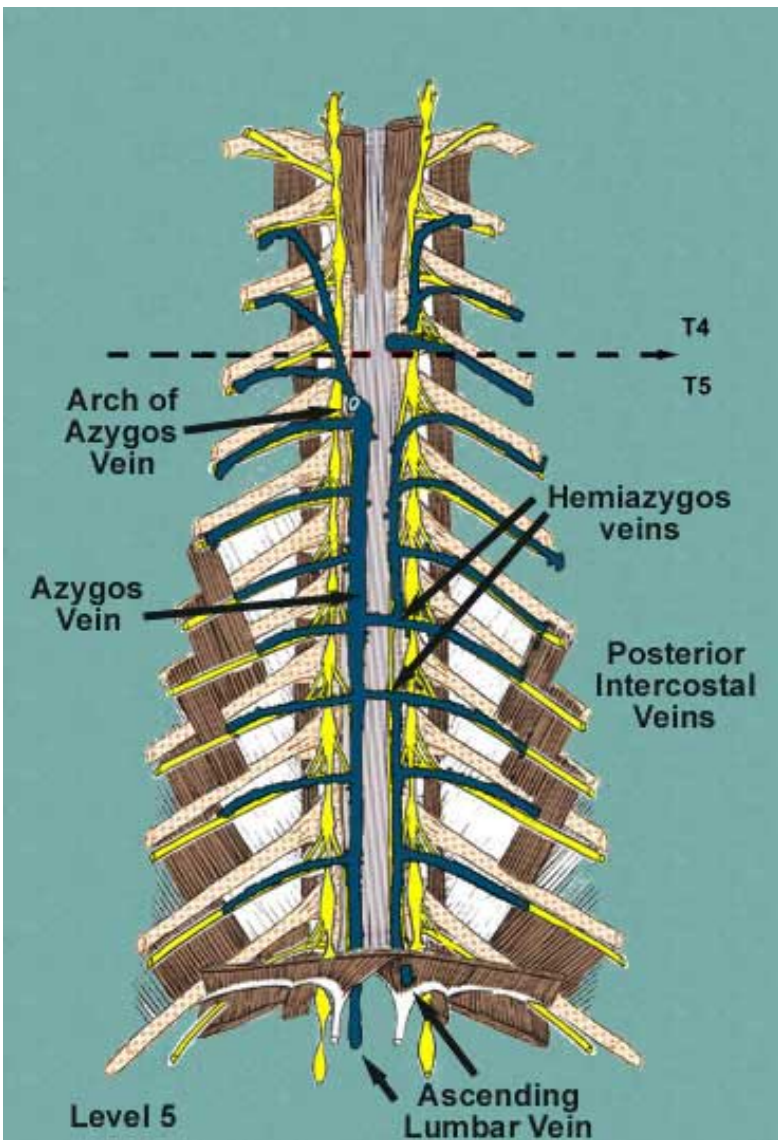
Contents:

Thoracic aorta, esophagus & esophageal plexus, thoracic duct, thoracic sympathetic trunks, post mediastinal lymph nodes, thoracic splanchnic nerves, azygos & hemiazygos veins



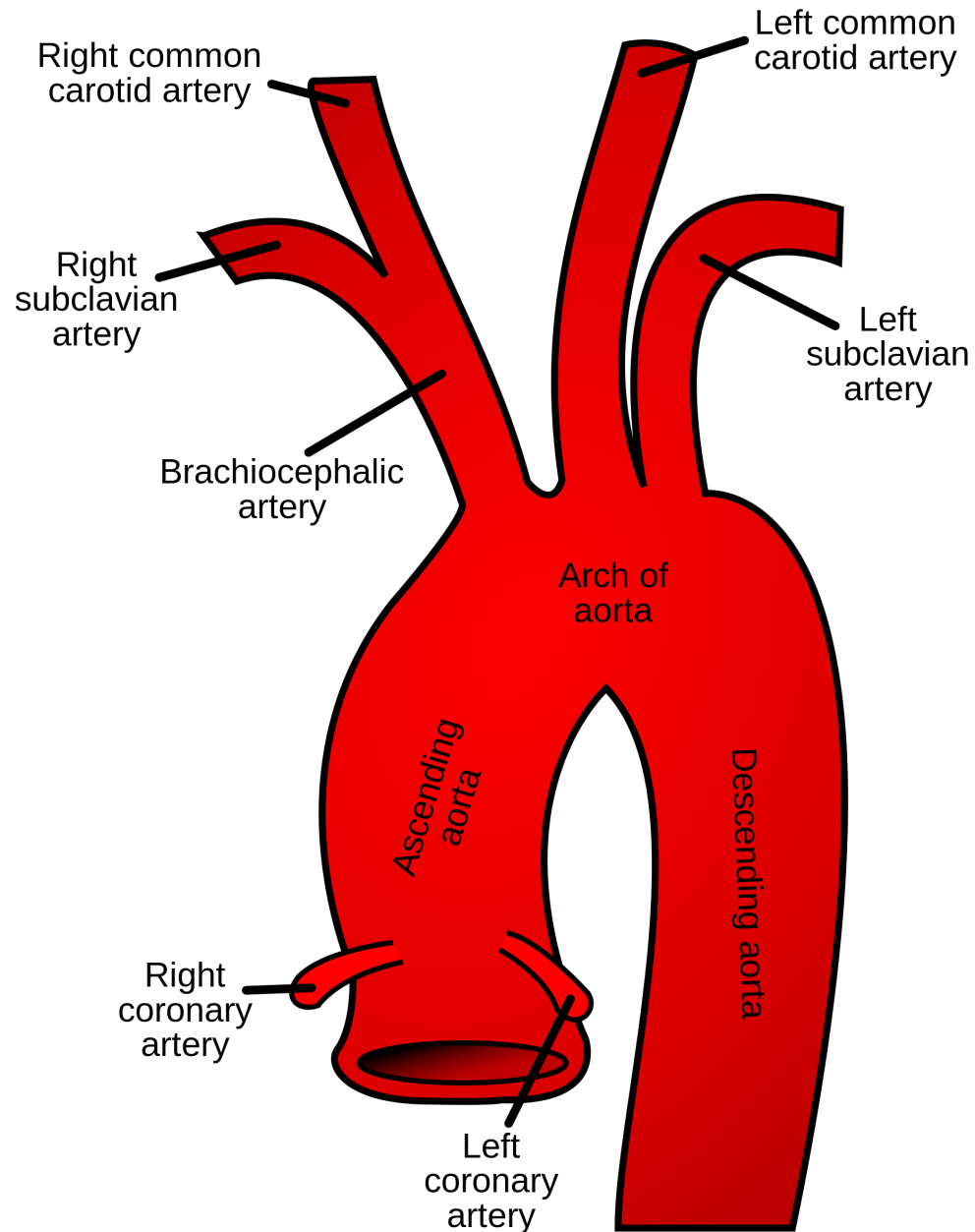


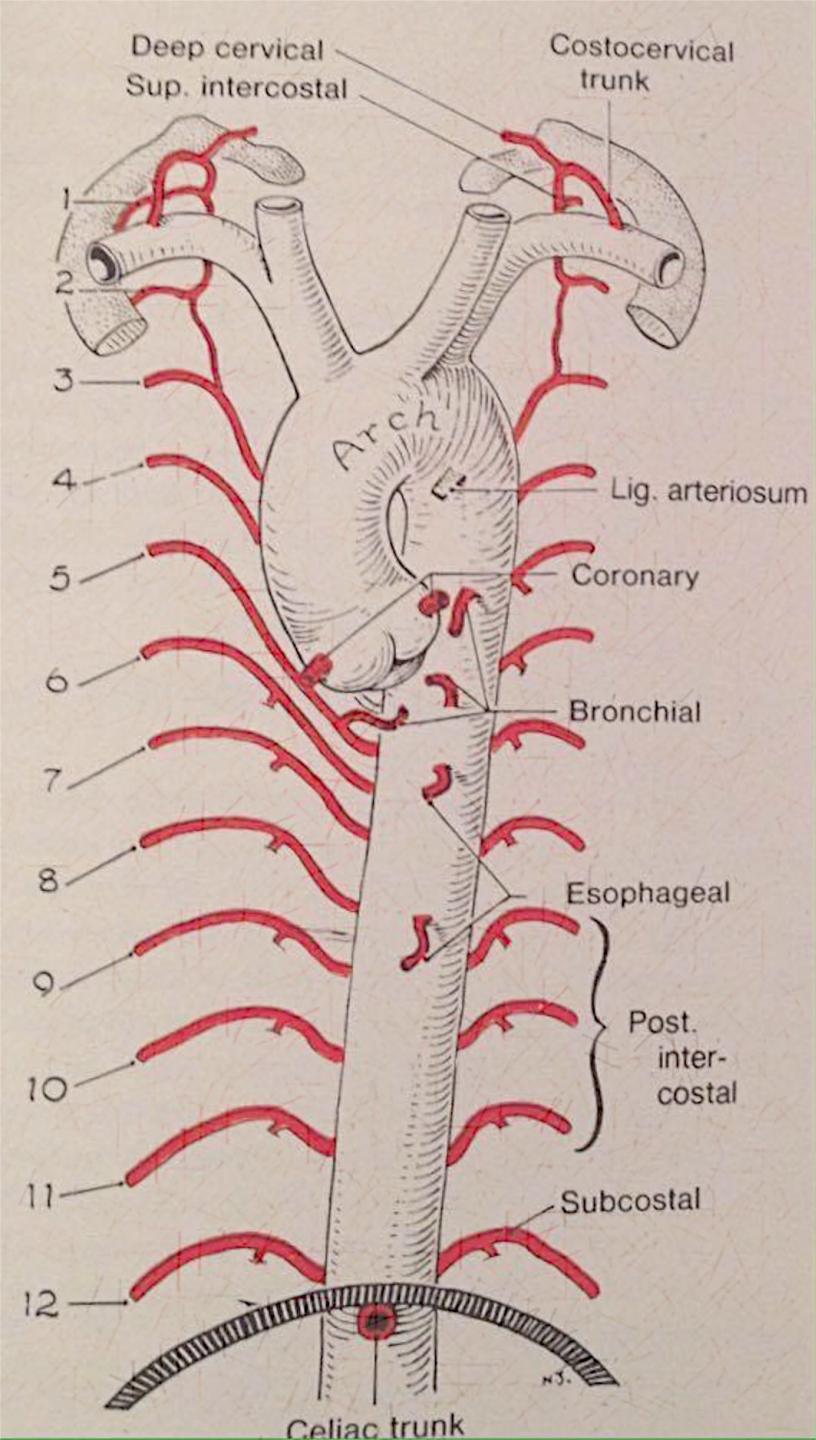




Thoracic Aorta

The segment
of descending
aorta passing
from the
posterior
mediastinum





Branches:

Pericardial brs
 Bronchial aa
 Esophageal aa
 Mediastinal aa
 Phrenic brs
 Posterior intercostal aa
 Subcostal aa

Esophagus

Course: Superior to posterior
mediastinum

Located behind the arch of the
aorta, pericardium & left
atrium

Enters esophageal hiatus of the
diaphragm at level of T10

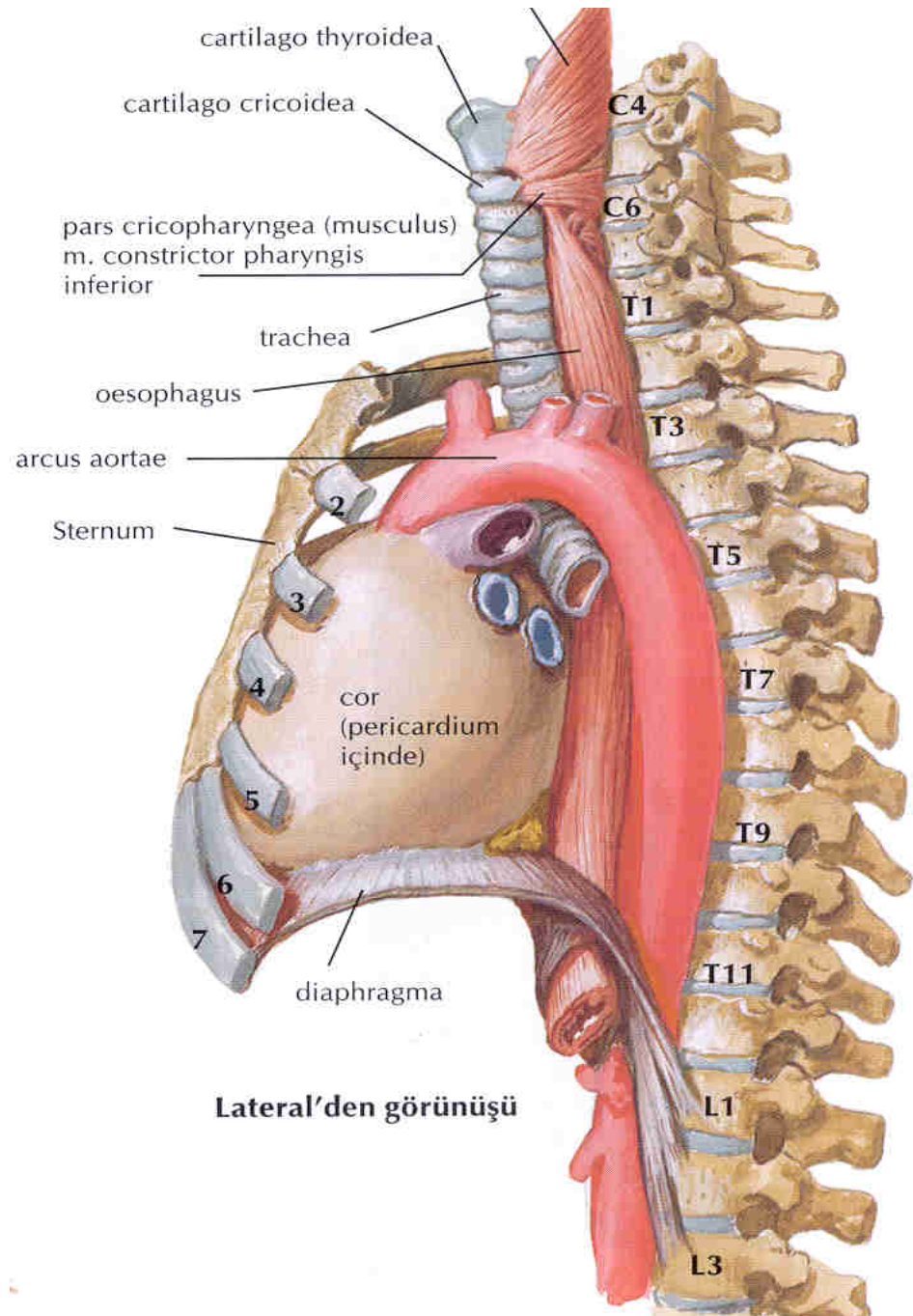
Anatomic Impressions or Constrictions:

At the beginning of esophagus

Crossing with aortic arch

Crossing with left main bronchus

Diaphragmatic hiatus



Thoracic Duct

Largest lymphatic channel in the body

Originates from the **cisterna chyli** in the abdomen & passes thru the aortic hiatus of the diaphragm at level of T12

Relations

Posterior: Bodies of inferior 7T vertebrae

Anterior: Esophagus

Left: Thoracic aorta

Right: Azygos vein

Conveys lymph from:

Lower extremities

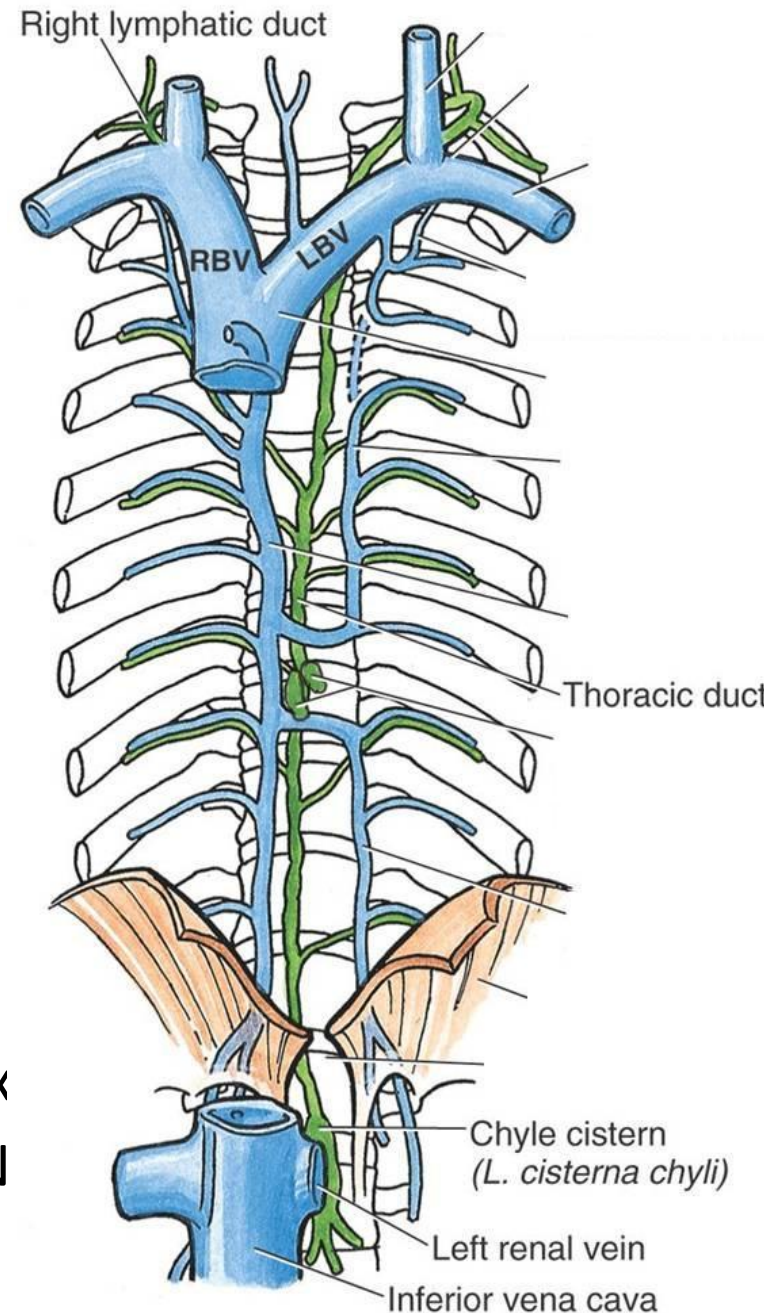
Pelvic cavity

Abdominal cavity

Left side of thorax

Left side of H&N

Left upper limb



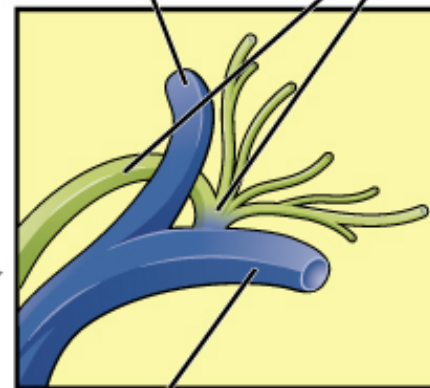
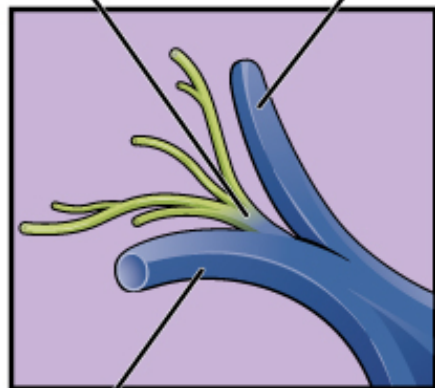
Anterior view

Right lymphatic duct

Right internal jugular vein

Left internal jugular vein

Thoracic duct drains into subclavian vein



Right subclavian vein

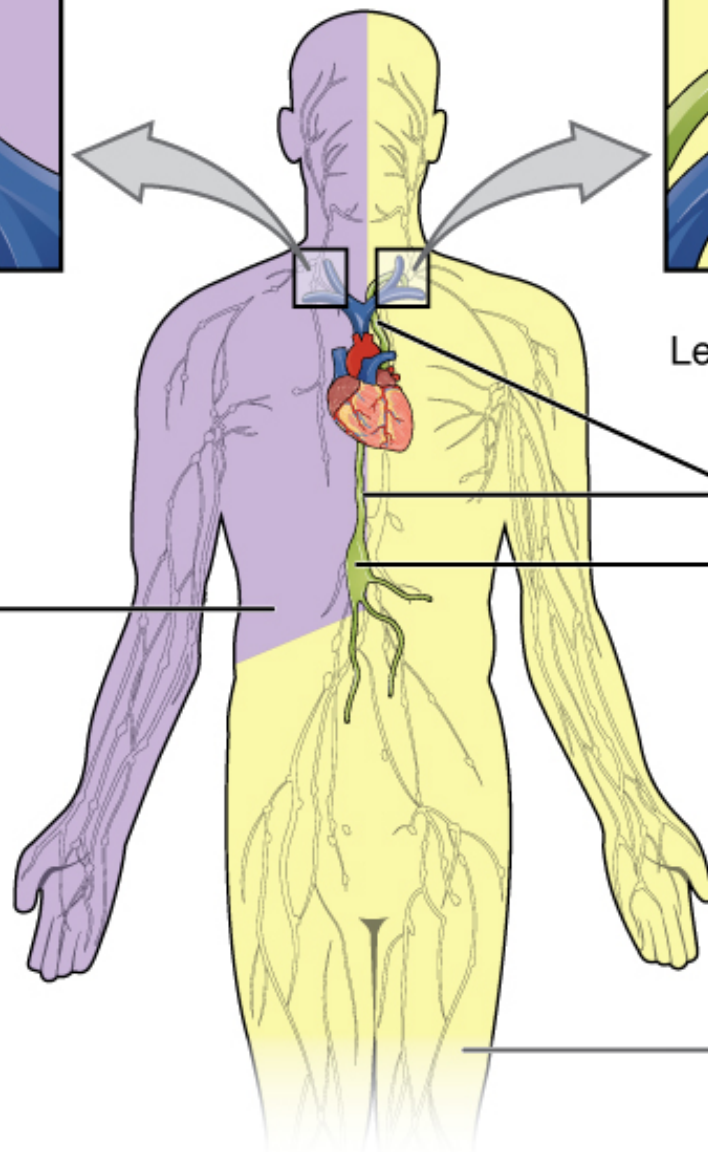
Left subclavian vein

Drained by right lymphatic duct

Thoracic duct

Cisterna chyli of thoracic duct

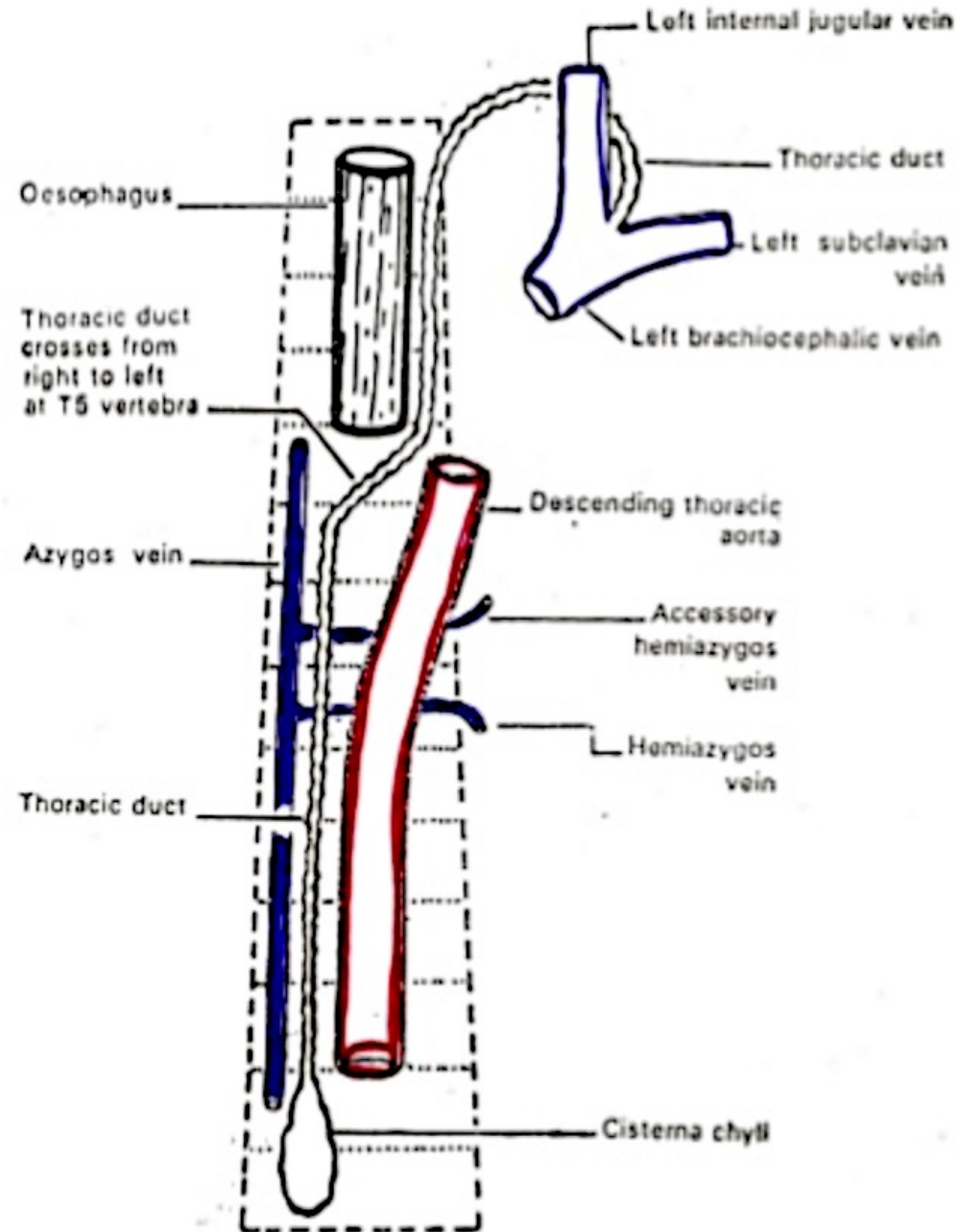
Drained by thoracic duct



Lymph Nodes of the Posterior Mediastinum

Posterior Mediastinal Lymph Nodes

- receive lymph from esophagus, posterior aspect of the pericardium, diaphragm & middle posterior intercostal spaces (ICS)

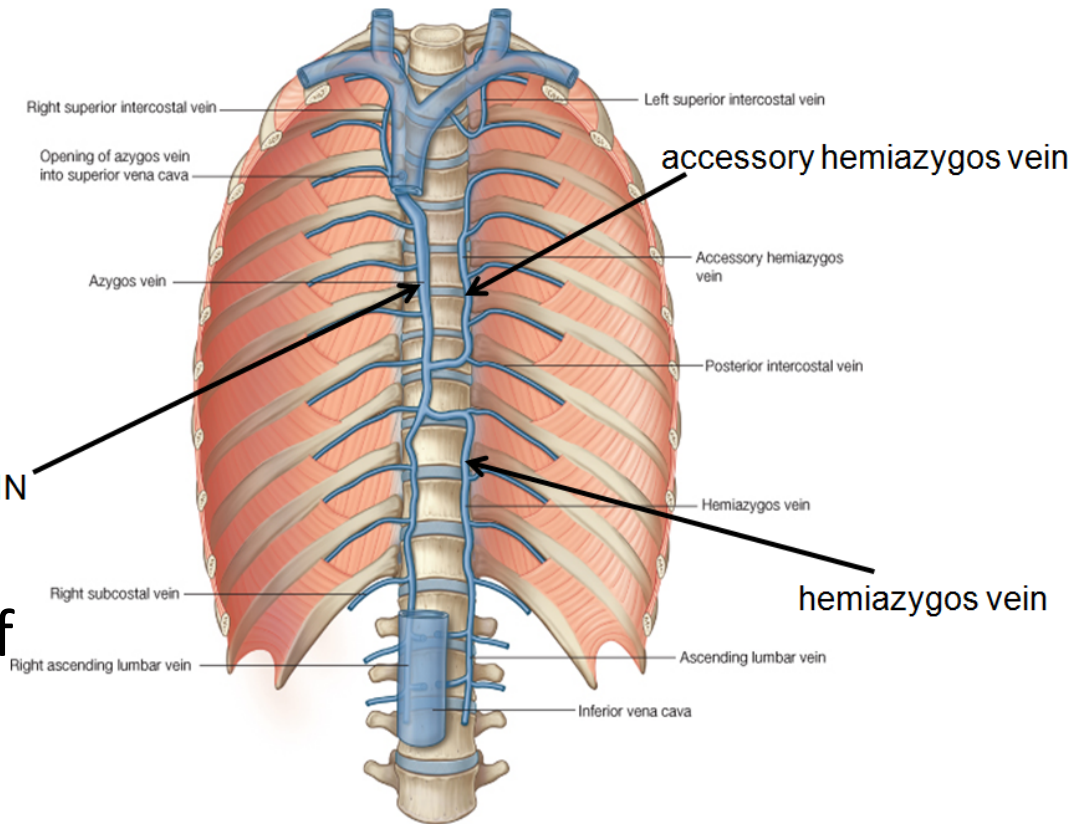


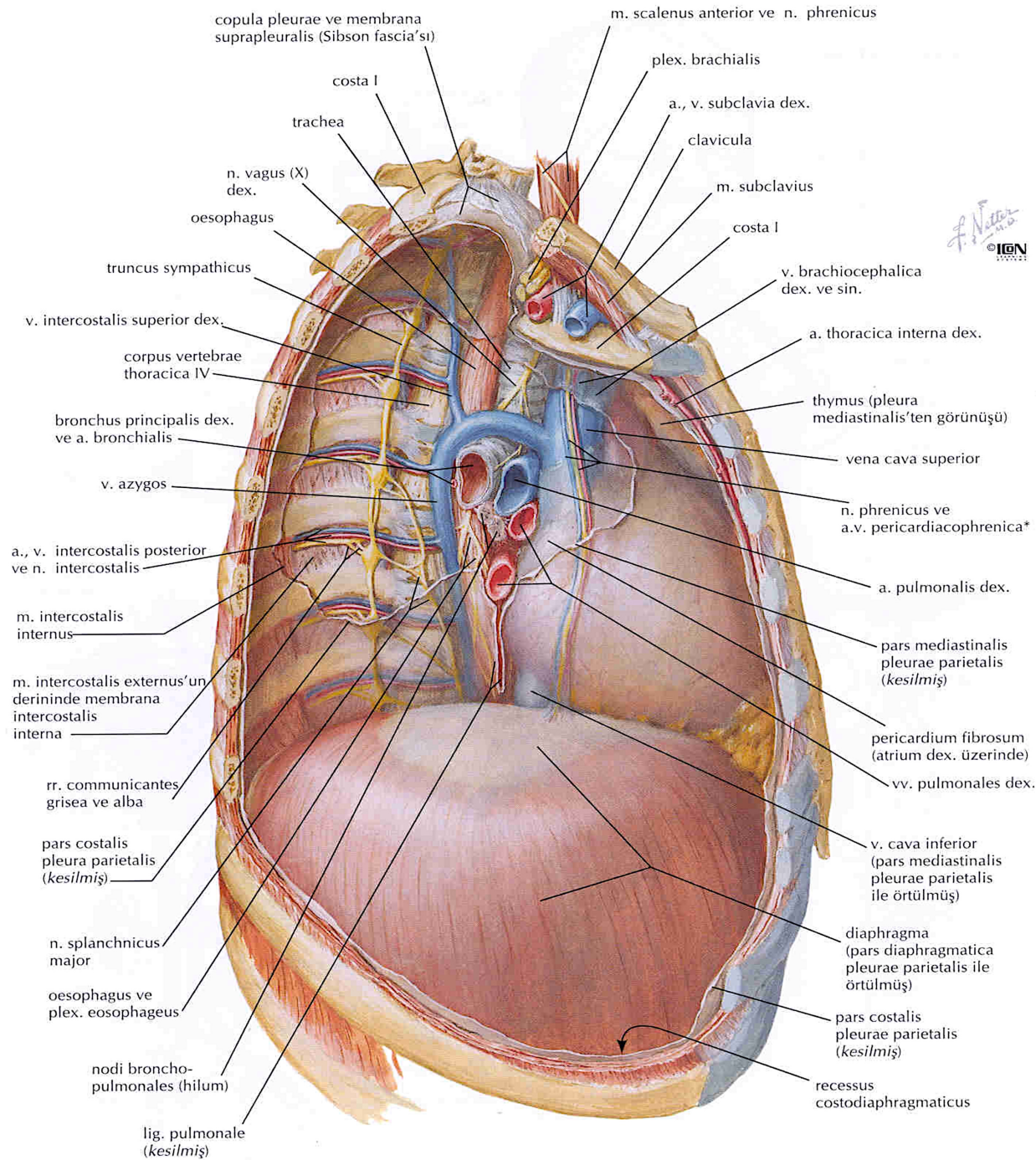
Azygos Venous System

Drains the back & thoraco-abdominal walls and the mediastinal viscera

Azygos Vein

- forms a collateral pathway b/w S&IVC
- passes to the right side of inferior 8 thoracic vertebrae
- arches over the root of the right lung to enter the SVC
- receives posterior intercostal veins, mediastinal, esophageal & bronchial veins





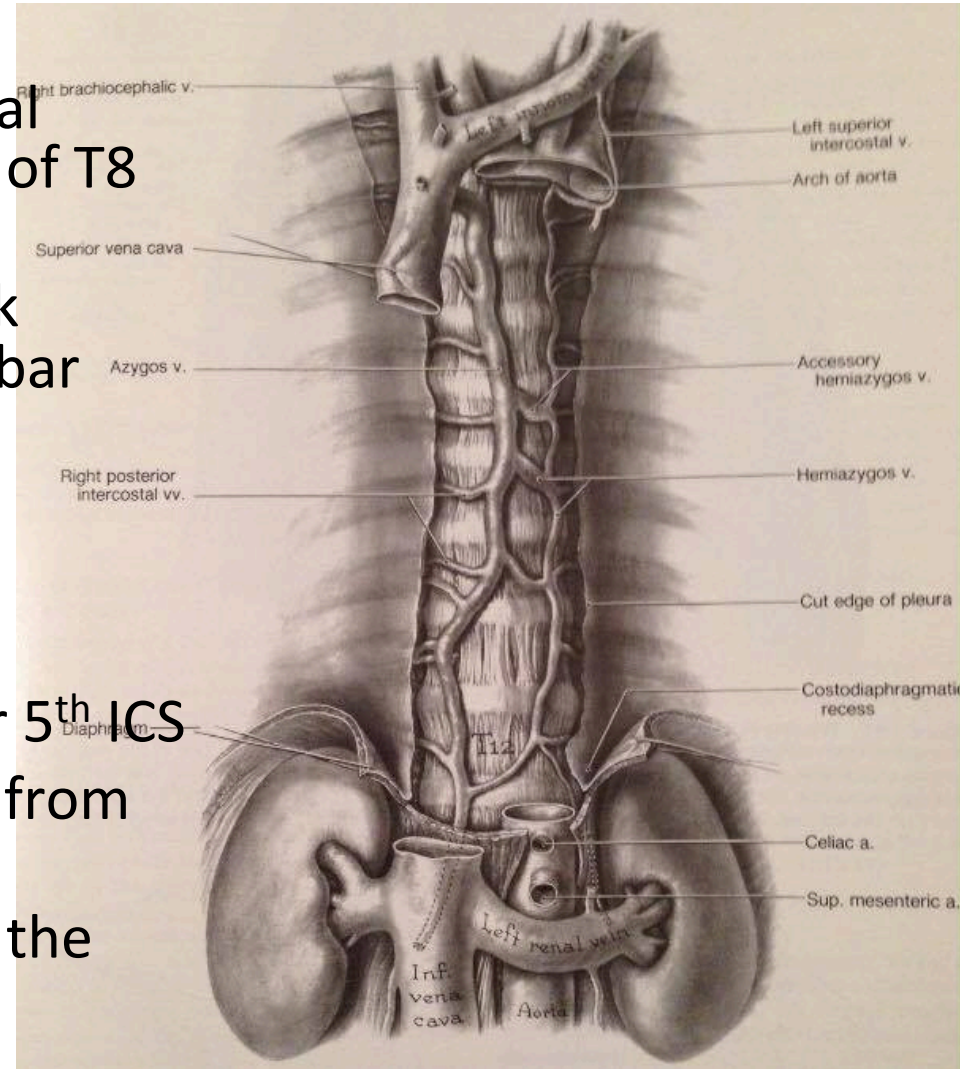
Azygos Venous System of Posterior Mediastinum

Hemiazygos Vein

- arises on left side of the vertebral column ascending up to the level of T8
- receives the inferior 3 posterior intercostal veins, a common trunk formed by the left ascending lumbar and subcostal veins and inferior esophageal and mediastinal rami

Accessory Hemiazygos Vein

- starts at the medial end of 4th or 5th ICS
- descends on left receiving veins from T4 to T8
- crosses to the right at T7 to join the azygos vein



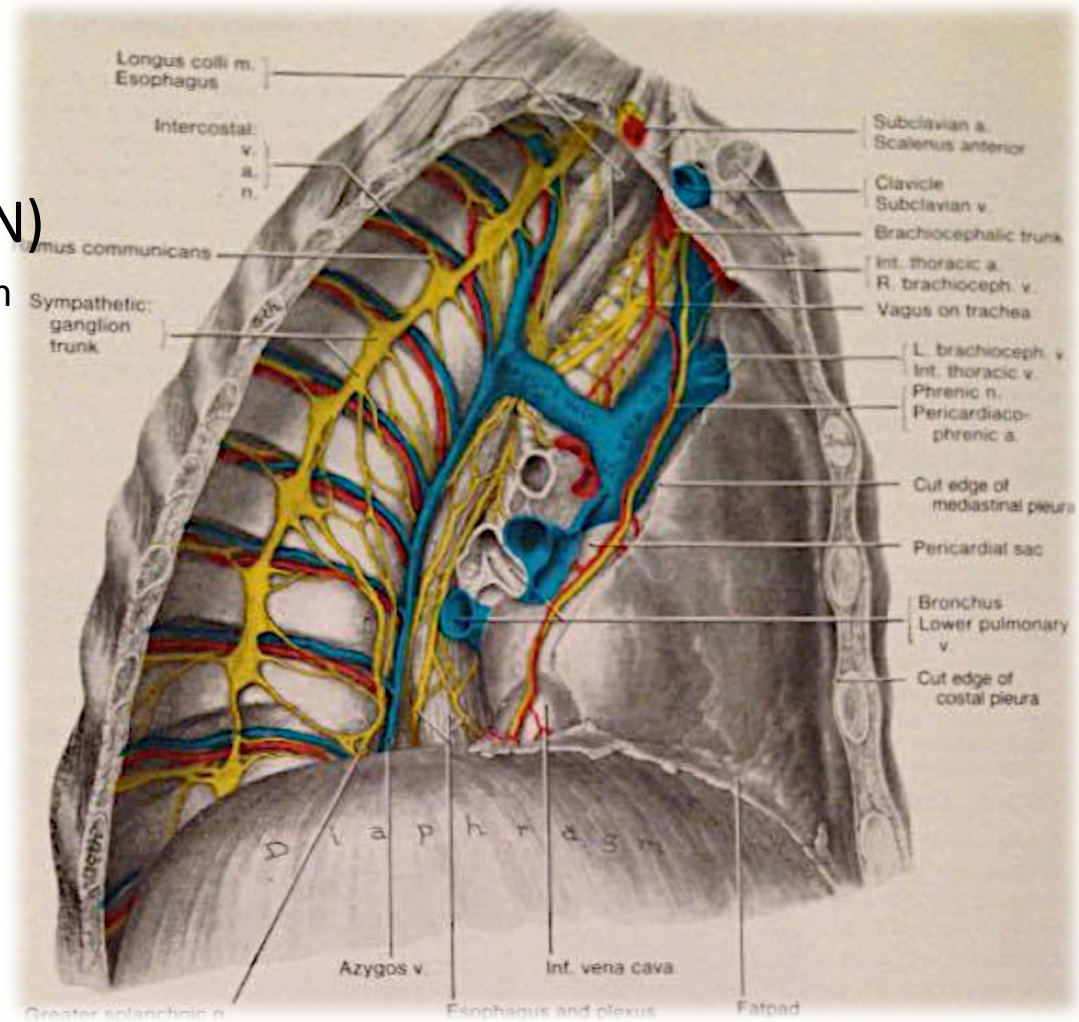
Nerves of Posterior Mediastinum

Thoracic Sympathetic Trunks

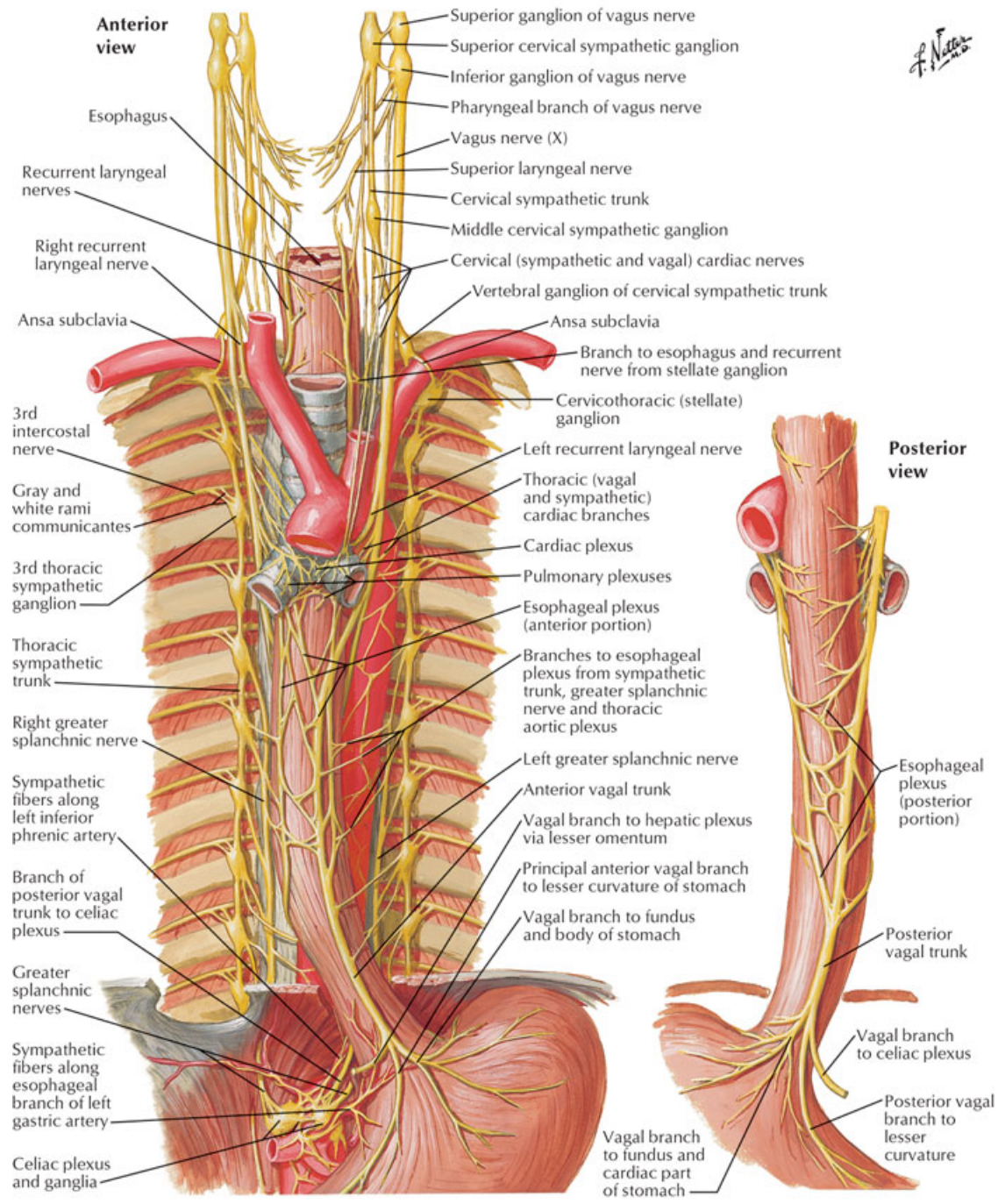
Lower Thoracic Splanchnic Nerves

(Greater, Lesser and Least SN)

- presynaptic fibers from 5th thru 12th sympathetic ganglia
- sympathetic innervation for most of the abdominal viscera



Nerves of Esophagus



SO LONG AND...



Thanks for all the fish!